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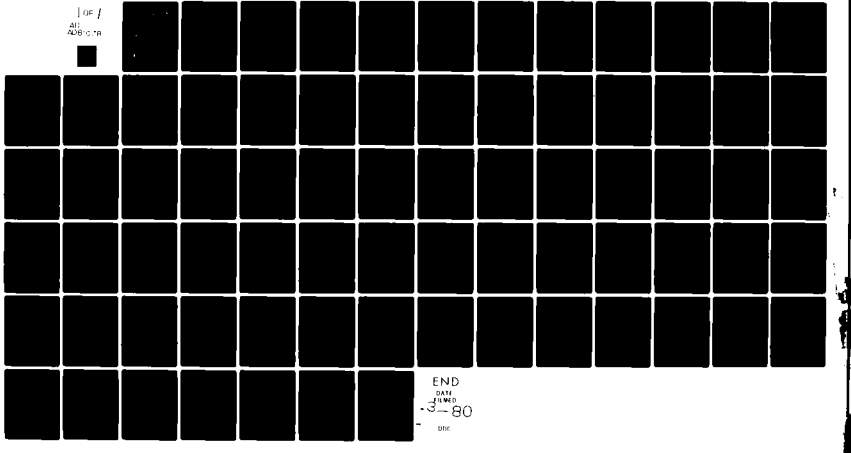

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DAVID W. TAYLOR NAVAL SHIP RESEARCH AND DEVELOPMENT CENTER

Bethesda, Md. 20084

AUTOMATED TECHNICAL LIBRARY SYSTEM USERS MANUAL

by

Shevra L. Martin

FINANCIAL MANAGEMENT DEPARTMENT

December 1979

DTNSRDC/FMD-79/01

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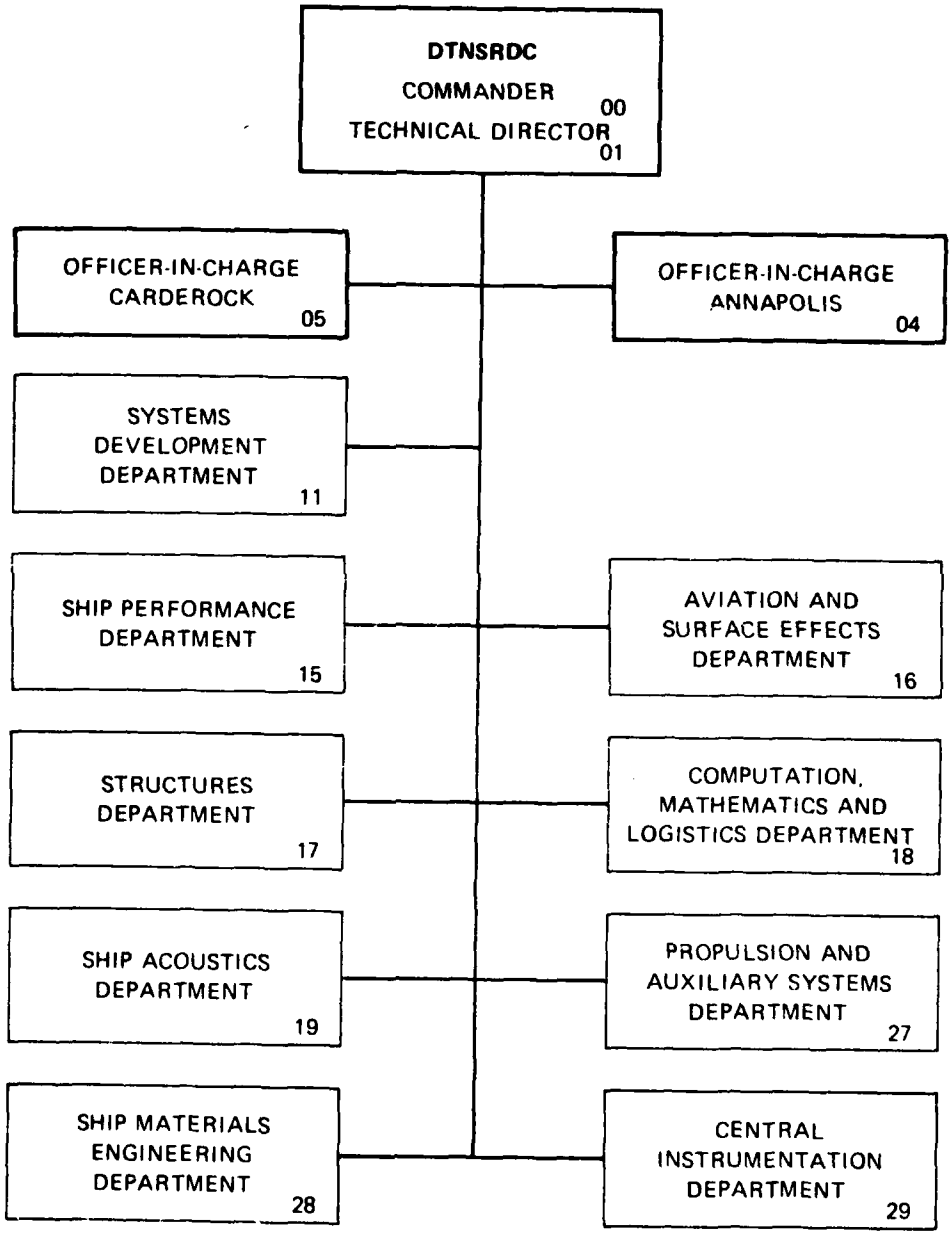

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TITLES (Taylor Information Tie Line for Engineers and Scientists) automates several library functions, including cataloging, reference, circulation, interlibrary loan, shelf list control, and SDI. Output products include Union COM (computer-output-microfiche) catalogs for five library branches, overdue notices, bibliographies, a new accessions bulletin, and a Center reports bibliography. This on-line users guide describes the concepts of a hierarchical thesaurus, generic retrieval, index searching, free-text searching, formatting output displays, PROFILE, and other available on-line search techniques.

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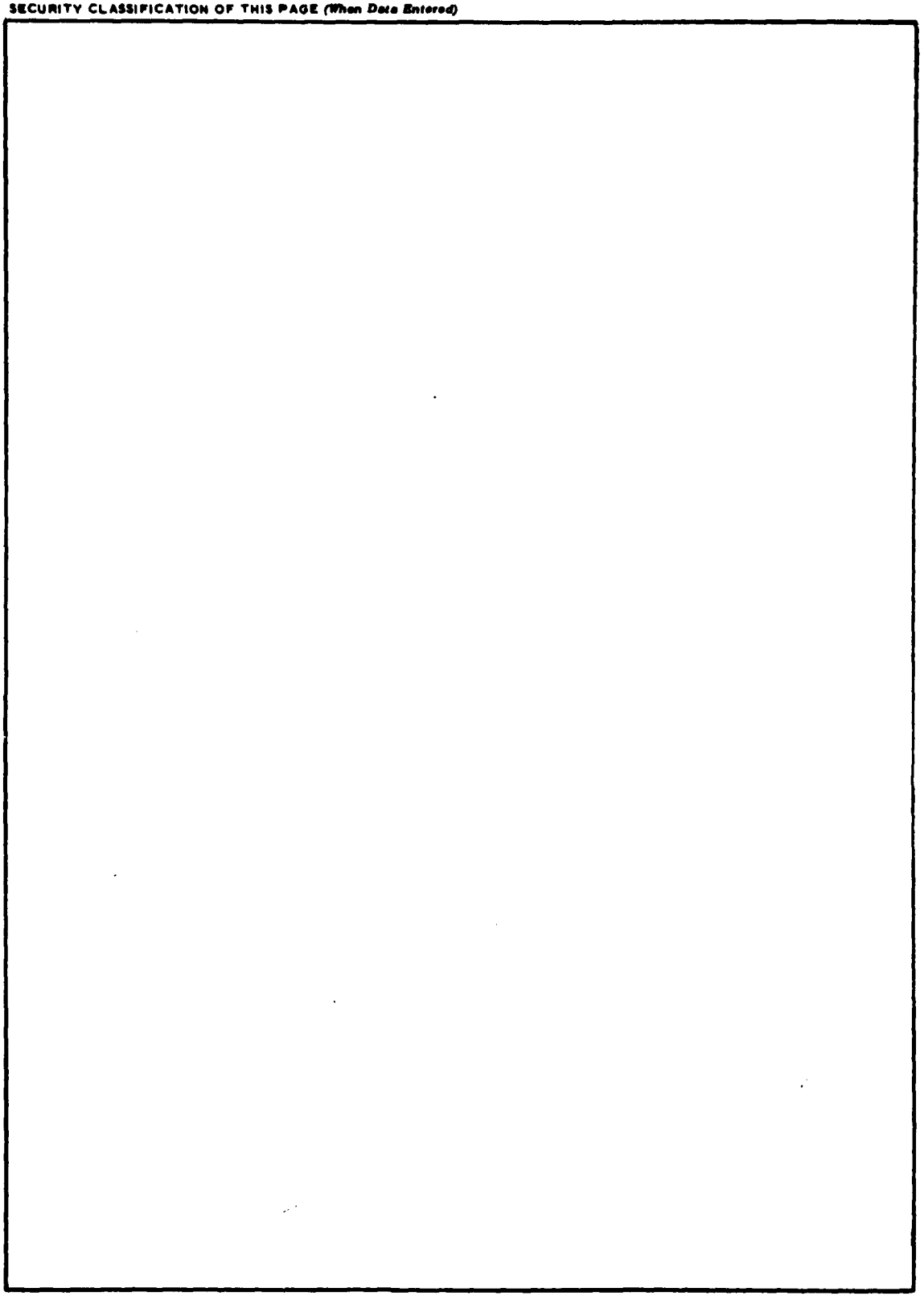


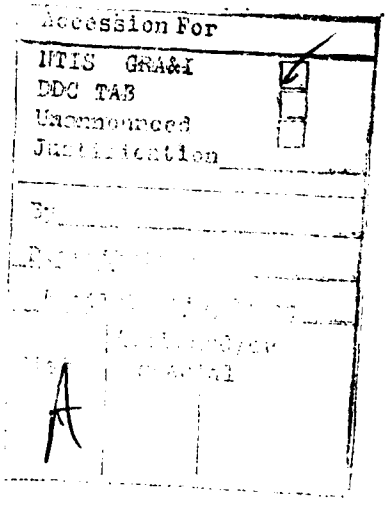
PREFACE

The purpose of this manual is to acquaint users of the Library system with the scope and make-up of the Library data base, as well as techniques for retrieving information from the data base interactively. While "users" of the system are understood to be Library reference staff members, this manual may be used by Library clientele as well.

This manual contains all the information required for successful reference searching; however, you might want to supplement this manual with the Battelle-authored User's Reference Manual. A convenient wall chart entitled BASIS BASICS: UTILIZING THE LIBRARY SYSTEM is also available for approved TITLES users.

Any constructive comments about this manual, as well as requests for assistance in utilizing the Library system, should be directed to:

The Library Systems Analyst and
Data Base Administrator
Code 6080
David W. Taylor Naval Ship Research and
Development Center
Bethesda, Maryland 20084
Phone: (301) 227-1127



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Abstract

TITLES (Taylor Information Tie Line for Engineers and Scientists) automates several library functions, including cataloging, reference, circulation, interlibrary loan, shelf list control, and SDI. Output products include Union COM (computer-output-microfiche) catalogs for five library branches, overdue notices, bibliographies, a new accessions bulletin, and a Center reports bibliography. This on-line users guide describes the concepts of a hierarchical thesaurus, generic retrieval, index searching, free-text searching, formatting output displays, PROFILE, and other available on-line search techniques.

Administrative Information

This work was performed under overhead. The principal investigator is Shevra L. Martin, Financial Management Department, David W. Taylor Naval Ship Research and Development Center (DTNSRDC).

1. Library System Overview

1.1 Introduction

Why automate? This is a question asked by many people concerned with the Center's Library. The DTNSRDC Automated Library System is the result of a Systems Analysis, Economic Analysis, Feasibility Study, and User Survey in which the productivity, timeliness, and impact of existing methods and procedures were evaluated in light of the established goals of the Library. Many of the circumstances and problems that led the Library to conduct this operational review are common among technical libraries:

- The exponential rate of growth in the literature of science and technology
- The difficulty in hiring under personnel ceilings
- The drudgery of performing repetitive and rote tasks
- The new interdisciplinary approach to solving today's technical problems, which render traditional classification schemes obsolete
- Redundant data-gathering and storage activities resulting in large and cumbersome filing systems
- Lack of standardization in cataloging practices and indexing terminology
- Requests by individual project offices to organize their private document collections
- Lack of adequate subject access to Center employee-authored literature.

TITLES (Taylor Information Tie Line for Engineers and Scientists) performs a variety of tasks, functions, and activities, of which the most important are:

- Interactive search and retrieval in support of the reference function
- Circulation control
- Integration of the collections of five distinct library branches

- Inventory control
- Production of public catalogs on computer-output-microfiche
- Maintenance of interlibrary loans
- Bibliographic control over Center reports
- Selective dissemination of information
- New accessions announcements

This manual will deal in depth with only one aspect of the Library system: on-line information retrieval.

1.2 Collections in the Data Base

The data base is broad in scope, encompassing the following:

- Library collections from the unclassified libraries at Carderock, Annapolis, and the Aviation and Surface Effects Department, and the classified libraries at Carderock and Annapolis
- The entire body of DTNSRDC-authored literature, including:
  a. Formal and informal Center reports
  b. pre-"Center" Carderock and Annapolis reports
  c. informal reports including test & evaluation reports, technical memoranda, etc.
  d. papers, articles, presentations, graphics, workshop proceedings
  e. Contractor reports
  f. proposals
  g. planning documentation
  h. plans and diagrams
- The Navy Energy R&D Office document collection
- Intelligence documentation
- NACA reports
- America/Britain/Canada document exchange reports
- COMTAC publications
- Submarine Control reports collection
- Seaplanes collection
- Patent Counsel collection

1.3 Publication Types in the Data Base

A wide variety of publication types and formats are included:

- Technical reports
- Memoranda
- Books and monographs
- Translations

- Foreign language material
- Theses and dissertations
- Patents
- Conference proceedings and individual papers
- Periodical articles
- Drawings and plans
- Handbooks, dictionaries, reference works
- Microfiche and film
- Serials

Not included are many technical reports and periodical articles from other available data bases, such as NASA/RECON, DDC, and Lockheed Dialog.

1.4 Data Base Files and Records

The Library system is comprised of Library data base files, BASIS* data base management system files and utilities, and other special program files. The data base files consist of head files, index files, a thesaurus file, and a queue file of records in processing. Figure 1 shows the relationship between these files.

The HEAD FILE, or master file, is the file of records that contains all of the information about the Library collection. The HEAD FILE is made up of RECORDS, and the RECORDS are made up of FIELDS. There are two types of RECORDS in the HEAD FILE, cataloging records and circulation records (see Figure 2).

1.4.1 Cataloging Records

A record containing bibliographic information is created for every document in the Library collection. One cataloging record is created for each title, irrespective of the number of copies owned. Every edition of a publication merits a separate record, as does each volume and part. Conference proceedings, as well as their individual relevant papers, are assigned separate cataloging records.

1.4.2 Circulation Records

A circulation record is generated for every circulating Library publication. Once the publication is returned, however, the circulation record is deleted. If several copies of a title are charged out, a circulation record containing due date and copy information is made for every circulating copy. Circulation records are also made for interlibrary loans.

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*Battelle's Automated Search Information System of Battelle Columbus Labs.

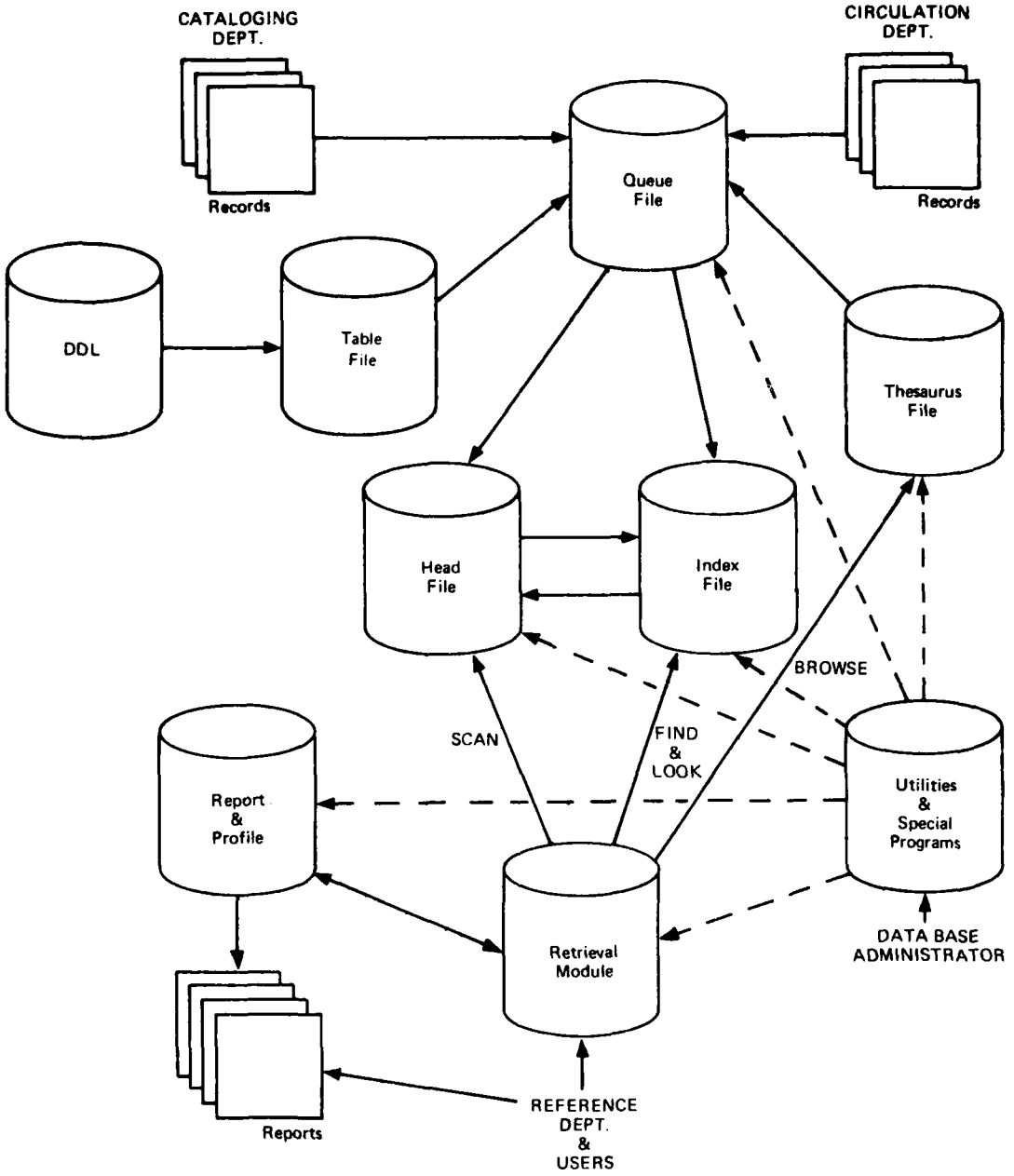

Figure 1 – Relationship between System Files

Cataloging Record

ITEM 1

RECORD ID 365
CALL NUMBER VM 5.A 28G
DATA BASE B
RECORD ENTRY DATE 790104
CATALOGER NUMBER 2
CORPORATE SOURCE NAVAL SHIP RESEARCH AND DEVELOPMENT CENTER
PERSONAL AUTHOR MAIN ENTRY:ELLSWORTH W M
TITLE HYDROFOIL DEVELOPMENT-ISSUES AND ANSWERS. IN AIAA/SNAME ADVANCED MARINE VEHICLES CONFERENCE, SAN DIEGO, 1974
PERSONAL AUTHOR ELLSWORTH W M
PUBLICATION DATE 19740200
PAGINATION 12
SERIES NUMBERS AIAA PAPER 74-306
SUPPLEMENTARY NOTE FOR PRIMARY DOCUMENT, SEE VM 5.A 28;SPONSORED BY AMERICAN INSTITUTE OF AERONAUTICS AND ASTRONAUTICS AND BY SOCIETY OF NAVAL ARCHITECTS AND MARINE ENGINEERS.
SHELF LIST CODE M
PUBLISHER AMERICAN INSTITUTE OF AERONAUTICS AND ASTRONAUTICS
LIBRARY CARDEROCK C/REF
CARDEROCK COPIES 1
LIBRARY ANNAPOLIS AN
ANNAPOLIS COPIES 3
FIELD/GROUP 1320;1321;1322;1323
MAJOR DESCRIPTORS HYDROFOIL CRAFT-STATE OF THE ART;NAVAL RESEARCH
SUBJECT DESCRIPTORS:SHIP AUXILIARY EQUIPMENT;NAVAL VESSELS;HIGH STRENGTH ALLOYS;STAINLESS STEEL;PROPULSION SYSTEMS(MARINE);HYDROFOILS;STRUTS; CONTROL;SHIP STRUCTURAL COMPONENTS
IDENTIFIERS HUDAP(HYDRODOIL UNIVERSAL DIGITAL AUTOPILOT);SH:AGEH 1; SH:PGH 1;SH:PGH 2;SH:FHE 400(CA);SH:PCH 1;SH:PHM;AL:HY-130;AL:17-4PH; SH:PT150(SW);SH:HS DENISON
CENTER DOCUMENT TYPE:PA

Circulation Record

ITEM 1

RECORD ID 400312
DATA BASE B
CIRCULATION CALL NR U021421C1
CATALOG RECORD ID 340
LIBRARY C
BORROWER'S NAME FOLB R
DUE DATE 780315
WAIT LIST HAGEN G R 1560

Figure 2 – A Typical Cataloging and Circulation Record

2. Getting ONLINE

The steps involved in utilizing the Library system on-line are:

(i) Establishing computer communications
(ii) Logging on to the Center's computer system
(iii) Logging on to the Library system
(iv) Conducting your search session
(v) Terminating your search session
(vi) Logging out of the computer system
(vii) Breaking communications

This section will cover the procedures for all but one of these steps, (iv) conducting your search session, which will be covered in Sections 3 to 6.

2.1 Logging ON

The Library system is presently operational on the Center's CDC 6000 series computer system.

Those who wish to use the Library system must obtain a Computer Center USER NAME and ACCESS NUMBER, as well as a BASIS USER ID, from the Library Data Base Administrator.

STEP 1: Dial one of the following phone numbers from any remote terminal:

	300 BAUD	1200 BAUD
Carderock	227-3000	227-3400
Annapolis	(301) 267-2011	(301) 267-2025

STEP 2: Log on to the computer system:
LOGIN, User Name
or:
LOGIN, User Name, SUP (to "suppress" system bulletin)

STEP 3: Enter your ACCESS NUMBER.

STEP 4: Enter the following after each COMMAND:
COMMAND – ETL,500
COMMAND – SCREEN,80
COMMAND – FETCH,BASIS,BASIS
COMMAND – BASIS,DB=CRMD,ID=your BASIS ID

You are now ready to begin your search session.

2.2 Logging OUT

When finished with your BASIS search session, enter:

END

or:

QUIT

After exiting from BASIS, you must LOGOUT from the computer system by simply entering:

COMMAND-LOGOUT

Now you may disconnect your telephone and switch off your terminal. Figure 3 provides an actual sample LOGIN and LOGOUT.

3. Retrieving Information

3.1 Thesaurus

The key to understanding information retrieval in the Library system is understanding the concept of a THESAURUS. In its simplest form, a thesaurus is a list of terms which may be used to describe a particular aspect of a publication. A thesaurus is important to an information system simply because people – authors, indexers, library clientele, and search analysts – use different terms to denote the same concept. For example, what an author might describe as "atmospheric pollution," a library user might ask for as "air pollution." What a Library cataloger indexes under "residual fuels," a Navy man might look up under "bunker oils." The thesaurus tells those who are indexing documents and those who are searching for information the proper terms to use.

The Library has created and maintains both on-line and in printed form a two-part Thesaurus for Subjects and Corporate Sources. Both parts are extensive lists of thousands of terms that may be used by Library catalogers in indexing documents for the data base.

To create the corporate source thesaurus, the Library acquired the Defense Documentation Center (DDC) Source Hierarchy List and added records for professional societies, academia, DTNSRDC contractors, and other required corporate authors, as well as a detailed breakdown of the Center's organizational structure.

(User entry is underlined.)

```
NSRDC 6600 INTERCOM V 4.6
DATE  09/27/79
TIME  10.33.56.
LOGIN,CRSMARTIN,SUP

IIIIIIIIII ENTER ACCESS NUMBER-
COMMAND- ETL,500

COMMAND- SCREEN,80

COMMAND- FETCH,BASIS,BASIS

COMMAND- BASIS,ID=CRAD,DB=CRMD

BASIS   4.0  R15   790420

WELCOME TO THE DTNSRDC LIBRARY DATA BASE
THE LAST UPDATE WAS 790926 AT 124820
ENTER YOUR REQUEST
   1/END

DTNSRDC LIBRARY DATA BASE USAGE TERMINATED

GOODBYE
COMMAND- LOGOUT

CPA       2.507 SEC
SS        4.143 SEC
EST. SYSTEM COST  $      .58
EST. CONNECT COST $     0.50
CONNECT TIME     0 HRS.     3 MIN.
 09/27/79  LOGGED OUT AT 10.37.04.
```

Figure 3 – Sample LOGIN and LOGOUT Procedure

To create the subject thesaurus, the Library acquired DRIT* on tape, removed all cross-references, modified and expanded subject hierarchies in the disciplines listed below, and then added selected new cross-references, related terms, and scope notes.

Areas Modified in DRIT

- Ship design
- Propeller design
- Ship's types
- Fluid dynamics
- Energy conservation
- Pollution abatement
- Ships auxiliary systems
- Acoustics
- Materials
- Structures
- Aerodynamics
- Fuels
- Marine propulsion plants

The Library thesaurus is a special kind of thesaurus because it not only stores permitted terms, but also the terms' relationships to other terms. Section 3.1.1. describes these relationships.

While the thesaurus may be "browsed" on-line or consulted in printed form, it is not necessary to address the thesaurus directly while searching. Several "synonym-switching" relationships from the thesaurus are automatically duplicated in the index. These switching relationships generate messages during a retrieval session that refer users from nonused terms to similar but permitted terms.

"Generic" or "hierarchical" retrieval is also achieved without having to address the thesaurus. When a record is input, the system will automatically index that record against every term defined in the thesaurus as a BROADER TERM (BT) to the assigned term. For example, if a Library indexer assigns the single corporate author "DTNSRDC. Computation and Mathematics Dept," the system will automatically "up-post" the document to appear also under the index entries for "DTNSRDC. Carderock," "Naval Material Command," and "Navy Dept." Likewise, when a user searches on "Fluid Flow," he automatically retrieves records for documents that had been indexed under many specific types of flow.

To see itemized lists of broader and narrower terms, as well as to retrieve lists of related terms, accepted abbreviations, and notes on a term's usage, you may consult the thesaurus on-line directly from the retrieval module by entering the term "BROWSE." To return to the retrieval module, enter "BASIS."

---

*DDC Retrieval and Indexing Terminology.

Example

```
   1/BROWSE


ENTER TERM
    /MARINE PROPULSION PLANTS

MARINE PROPULSION PLANTS
  SN    USE MARINE PROPULSION FOR GENERAL DISCUSSIONS.
  SN    FOR SPECIFIC SYSTEMS OR MACHINERY, CONSULT
  SN    MARINE PROPULSION PLANTS HIERARCHY.
  BT    MARINE PROPULSION
  BT    PROPULSION SYSTEMS
  UF    PROPULSION MACHINERY(MARINE)
  UF    PROPULSION PLANTS(MARINE)
  UF    SHIPS SYSTEMS
  UF    SHIP PROPULSION MACHINERY
  NT *  MARINE BOILERS
  NT *  MARINE NUCLEAR PROPULSION PLANTS
  NT *  PROPULSION AUXILIARIES(MARINE)
  NT *  PROPULSION UNITS(MARINE)
  NT *  PROPULSOR SYSTEMS(MARINE)
  NT *  TRANSMISSION SYSTEMS(MARINE)
  RT    EQUIPMENT
  RT    SHIPBOARD PIPING SYSTEMS
  RT    SHIP ELECTRIC POWER PLANTS

ENTER TERM
    /NAVAL ORDNANCE LAB

NAVAL ORDNANCE LAB
  SN    FOR LOWER ORGANIZATIONAL LEVELS SEE NOL(LOWER ORG
  SN    LEVEL) EX-NOL. RESEARCH DIV
  AB    NOL

ENTER TERM
    /BASIS
```

3.1.1 Library Thesaurus Relationships

Symbol	Meaning	Explanation
USE	Use	When a term is followed by an instruction to "USE" another term, it means that the first term ("lead" term) is not used in indexing. USE references indicate either: (1) two terms are synonymous, or (2) only one form of a multiword term is used. For example:

```
1/PRIME MOVERS

          USE  DE=PROPULSION UNITS
          (MARINE)
   16 ITEMS SAVED AS SET 1
2/BUNKER OILS

          USE  DE=RESIDUAL FUELS
    7 ITEMS SAVED AS SET 2
3/HIGH EFFICIENCY

          USE  DE=EFFICIENCY
   50 ITEMS SAVED AS SET 3
```

USE AND	Combine all given terms	The system will automatically retrieve and combine appropriate terms. For example:

```
4/FUEL STABILITY

     175  USE  DE=FUELS
      71  AND  DE=STABILITY
    5 ITEMS SAVED AS SET 4


5/HIGH TEMPERATURE GAS TURBINES

      74  USE  DE=GAS TURBINES
      33  AND  DE=HIGH TEMPERATURE
   7 ITEMS SAVED AS SET 5
```

Symbol	Meaning	Explanation

USE OR	Select one or more of the following terms	For example:
		`6/ENERGY USAGE`
		`DO YOU MEAN ...`
		`.ITEMS. TERM`
		`A 80 DE=ENERGY CONSUMPTION`
		`B 23 DE=ENERGY DEMAND`
		`PICK LETTERS TO COMBINE`

NT	Narrower Term	This identifies a generic or hierarchical relationship between terms which is utilized by the system. All "NT's" are members of the same family as the lead term, but at a lower level. Whenever you enter a search term that has "NT's," you automatically retrieve not only those documents about the selected term, but also documents about any of the terms defined as narrower terms to the selected term.
		User entry: 1/fuel storage system
		Response includes records on storage of all types of fuels
		`ENTER TERM`
		`/FUEL STORAGE`
		`FUEL STORAGE`
		`BT STORAGE`
		`NT COAL STORAGE`
		`NT * GAS STORAGE`
		`NT OIL STORAGE`
		`NT PETROLEUM PRODUCTS STORAGE`
		`RT ENERGY STORAGE`
		`RT FUEL TANKS`
		`RT UNDERGROUND STORAGE`

BT	Broader Term	This is the reciprocal of the NT relationship. The lead term is a member, at a lower level, of each of the families of broader terms:

Symbol	Meaning	Explanation

```
ENTER TERM
    /GUIDED MISSILE FRIGATES

GUIDED MISSILE FRIGATES
  BT   FRIGATES
  BT   GUIDED MISSILE SHIPS
  BT   NAVAL VESSELS
  BT   SHIPS
```

Because the narrower/broader term relationships are "looked up" by the system when new records are input, documents should always be indexed and searched for at the most specific level. The system will automatically "up-post" a record to every term defined as "broader" to the selected term. For example, a report assigned the descriptor "synthetic petroleum" will also appear under its broader terms "synthetic fuels" and "fuels."

RT — Related Term

Related terms suggest other approaches that might be taken in conducting a search. For example:

```
ENTER TERM
    /MARINE BOILERS

MARINE BOILERS
  BT   BOILERS
  BT   MARINE PROPULSION PLANTS
  BT   MARINE PROPULSION
  BT   PROPULSION SYSTEMS
  UF   NAVAL BOILERS
  UF   SHIPS BOILERS
  UF   SHIP BOILERS
  NT   FORCED CIRCULATION BOILERS
```

Symbol	Meaning	Explanation
		NT ONCE THROUGH BOILERS NT REHEAT BOILERS NT SUPERCHARGED BOILERS NT TWO DRUM BOILERS NT WASTE HEAT BOILERS RT AIR HEATERS RT BOILER CASINGS RT BOILER CONTROLS RT BOILER EFFICIENCY RT ECONOMIZERS RT FURNACES RT OIL BURNERS RT PROPULSION UNITS(MARINE) RT SAFETY VALVES RT SUPERHEATERS
AF	Abbreviation for	User may enter an acronym or initialism as a shortcut. For example:

```
ENTER TERM
    /NOL

NOL
  AF   NAVAL ORDNANCE LAB

ENTER TERM
    /SSTG

SSTG
  AF   SHIP SERVICE TURBOGENERATORS

ENTER TERM
    /COM

COM
  AF   COMPUTER OUTPUT MICROFORM
```

Symbol	Meaning	Explanation
SN	Scope Note	A scope note tells a user how a term was used. For example:

```
ENTER TERM
     /MARINE DIESEL FUELS

MARINE DIESEL FUELS
   SN    FOR MARINE DIESEL FUEL
   SN    ACCORDING TO MILITARY
   SN    SPECIFICATIONS FOR NAVY
   SN    USE, USE DIESEL FUEL MARINE.
   BT    DIESEL FUELS
   BT    ENERGY SOURCES
   BT    FOSSIL FUELS
   BT    FUELS
   BT    FUEL OILS
   BT    MATERIALS
   BT    OILS
   BT    ORGANIC MATERIALS
   BT    PETROLEUM PRODUCTS
```

3.2 Index

On-line retrieval in the Library system is performed either through searching the on-line index or through a "free-text" search of a document set, or by a combination of both methods.

The index is an alphabetical list of key words that is created and updated with each data base update. Only certain data elements that are frequently requested in a reference search are pulled out and added to the index (see Figure 4). To search on other common data elements such as title, author, and report series number, consult the set of printed COM catalogs maintained by the Library (or free-text search nonindexed fields).

Figure 4 – Indexed Fields

Field No.	Search Mnemonic	Name
1	ID	Record ID
4	RED	Record entry date
7	CS	Corporate source
13	PD	Publication date
18	SL	Shelf list code
22	LC	Carderock ownership

Figure 4 – Indexed Fields (continued)

Field No.	Search Mnemonic	Name
24	LAN	Annapolis ownership
28	FG	Field/group (broad subject area)
29	DE (for Retrieval) MDE (for SORT and DISPLAY)	Major descriptors
30	DE	Specific descriptors
31	DE (for Retrieval) IDT (for SORT and DISPLAY)	Identifiers (open-ended terms)
32	TYP	Center document type
33	WU	Work unit number
36	RD	Reclassification date
46	CCN	Circulation call number
48	CRS	Corresponding cataloging record number for circulation records
49	LIB	Circulating library
51	BR	Borrower's name and code
53	DD	Due date
55	ILL	Interlibrary loan
61	LS	Lost

3.2.1 Document Sets

In order to conduct a literature search, one generally creates "document sets" and then combines these sets using Boolean expressions. To create a document set through an index search, enter the desired index term preceded by its field mnemonic and an "equal" sign:

Field Mnemonic = Value

Example

```
8/BR=COHEN S L

     64 ITEMS SAVED AS SET 8
9/FG=9001

    328 ITEMS SAVED AS SET 9
```

It is not necessary to precede subject queries (subjects include major descriptors, specific descriptors, and identifiers) with a field mnemonic. You may simply enter the field value.

Example

```
10/FLUID FLOW

    115 ITEMS SAVED AS SET 10
11/ENGINE EXHAUST

    2 ITEMS SAVED AS SET 11
```

In order to provide more efficient retrieval, certain fields are indexed according to predefined numeric ranges. Ranged fields include record ID (ID), Record Entry Date (RED), Publication Date (PD), Reclassification Date (RD), and Due Date (DD). Ranged fields may be searched by using the following relational operators:

EQ, IS,=	– EQUAL
GT	– Greater Than
LT	– Less Than
GE	– Greater Than or Equal to
LE	– Less Than or Equal to
BT,/	– Between, endpoints included
BX	– Between, endpoints excluded

To search a ranged field, enter the field value preceded by its search mnemonic and a relational operator:

Field Mnemonic Relational Operator Field Value

Example

```
12/PD GE 19790000

    213 ITEMS SAVED AS SET 12
13/ID 1/399999

    1739 ITEMS SAVED AS SET 13
14/DD LT 790815
    111 ITEMS SAVED AS SET 14
```

After creating document sets by searching on desired parameters, sets may be combined using BOOLEAN expressions:

Expression	Abbreviation	Interpretation
AND	A	Both one and the other
OR	O	One or the other or both
AND NOT	AN	One and not the other

To combine sets, enclose all Boolean statements, including embedded statements, in parentheses:

(document set no. Boolean Expression document set no.)

Example

```
1/SHIPS
      279 ITEMS SAVED AS SET 1
2/CS=NAVY DEPT

      341 ITEMS SAVED AS SET 2
3/CS=COAST GUARD

      8 ITEMS SAVED AS SET 3
4/PD GE 19770000

      1016 ITEMS SAVED AS SET 4
5/(1 AND (2 OR 3) AND 4)

      85 ITEMS SAVED AS SET 5
```

The resulting set from the above search consists of titles on ships published by either the Navy Dept. or Coast Guard during or later than 1977.

3.2.2 FIND Command

The FIND command allows a searcher to "stack" multiple commands on a single line.

Example

```
   6/FIND 3      (retrieves document set 3)

*       8    6/  3
   7/FIND NAVAL VESSELS AND PD GT 19760000

*     164    7/  NAVAL VESSELS
*    1094    8/  PD GT 19760000
*     115    9/  NAVAL VESSELS AND PD GT 19760000
```

To combine more than one Boolean expression in a FIND statement, use parentheses to avoid confusion.

Example

```
  10/FIND(FG=1315 AND (FG=1320 OR SHIPS) AND PD GE 19720000)

*     305   10/  FG=1315
*     122   11/  FG=1320
*     279   12/  SHIPS
*    1526   13/  PD GE 19720000
```

If a lengthy FIND statement exceeds a terminal line, use + followed by a carriage return and continue on the next line.

Example

(user input underlined)

```
16/FIND CS=ENERGY DEPT* AND +

FIND...FG=9001

*       65    16/  CS=ENERGY DEPT (  4   TERMS COMBINED)
*      328    17/  FG=9001
*       48    18/  CS=ENERGY DEPT* AND  FG=9001
```

Sometimes you are only interested in seeing the final results of a FIND statement without the step-by-step interim results. If this is the case, append the following to your FIND statement:

END NOLIST

Example

```
19/FIND CS=ENERGY DEPT* AND FG=9001 END NOLIST

*       48    21/  CS=ENERGY DEPT* AND FG=9001 END NOLIST
```

3.2.3 LOOK Command

Many times we do not know the proper form for entering a search term (field value). In a card catalog, it is possible to "thumb" through the cards at the approximate alphabetic location of the desired term. In the Library system it is not required for a searcher to know the precise format and spelling of a desired term. Remember that the thesaurus provides the index with a "synonym-switching" capability which directs you from an incorrect term to the preferred term with a message to USE, USE AND, or USE OR.

Occasionally, however, the system does not switch a user to a correct term.

Example

```
22/SWATH

NO SUCH TERM.  ENTER TERM* FOR ADJACENT TERMS.
     0 ITEMS SAVED AS SET 22
```

In these cases, it would be helpful to browse through the on-line index to see how terms were entered, as well as to see other terms with the same stem.

The LOOK command is used to display terms lists from the data base index. Three types of lists can be generated:

- Adjacent Term Lists
- Stem Lists
- Browse Lists

3.2.3.1 Adjacent Term Lists

An adjacent term list may be generated to display a list of terms from the index that is alphabetically adjacent to the user-supplied term. To create such a list, enter LOOK, field mnemonic, an "equal " sign, and the field value. For subjects, enter only LOOK and the field value.

Example

```
23/LOOK SWATH


  .ITEMS.     TERMS
A         1   DE=SWARD MACHINE
B         1   DE=SWASH
C        50   DE=SWASH(SMALL WATERPLANE AREA SINGLE HULL)
                 USE  DE=HIGH PERFORMANCE SHIPS
***** YOUR TERM *****
D         6   DE=SWATH SHIPS
E         1   DE=SWATH 2
F         1   DE=SWATH 3
MORE TERMS ARE AVAILABLE
PICK LETTERS TO COMBINE
```

Three terms above and below your term will be displayed from the index. Your possible responses are:

(i) ALL

(ii) Select letters or range of letters

(iii) MORE

In order to receive a longer display of adjacent terms, enter the desired number of terms in parentheses after the LOOK command. To receive a larger display of adjacents for your entire terminal session, use the SET command before the LOOK command using the form:

SET ADJACENTS TO number

Example

```
H         0  DE=PROPELLER BLADE CAVITATION NOISE
            4   USE  DE=CAVITATION NOISE
            1   AND  DE=PROPELLER CAVITATION
I         0  DE=PROPELLER BLADE EROSION
            3   USE  DE=EROSION
           16   AND  DE=PROPELLER BLADES
J         16  DE=PROPELLER BLADES
K          7  DE=PROPELLER BLADES(MARINE)
L          2  DE=PROPELLER BOSSES
                 USE  DE=PROPELLER HUBS
MORE TERMS ARE AVAILABLE
PICK LETTERS TO COMBINE
```

```
23/LOOK(10)ACOUSTIC
 .ITEMS.     TERMS
A        1   DE=ACETONES
B        1   DE=ACETYLENE
C        0   DE=ACID NUMBER
                USE  DE=SAPONIFICATION NUMBER
D        7   DE=ACIDS
E        1   DE=ACLS (AIR CUSHION LANDING SYSTEMS)
***** YOUR TERM *****
F        3   DE=ACOUSTIC ABSORPTION
G        8   DE=ACOUSTIC ARRAYS
H        1   DE=ACOUSTIC BUOYS
                USE  DE=SONOBUOYS
I        1   DE=ACOUSTIC CAMOUFLAGE
                USE  DE=ACOUSTIC COUNTERMEASURES
J        5   DE=ACOUSTIC COATINGS
MORE TERMS ARE AVAILABLE
PICK LETTERS TO COMBINE
  23/SET ADJACENTS TO 12

  23/LOOK PROPELLER


  .ITEMS.     TERMS
A        0   DE=PROPAGATION RATE
        22    USE  DE=PROPAGATION
        17    AND  DE=RATES
B        1   DE=PROPAGATION VELOCITIES
        22    USE  DE=PROPAGATION
        48    AND  DE=VELOCITY
C        3   DE=PROPANE
D        0   DE=PROPELLANT BINDERS
         0    USE  DE=BINDERS
         7    AND  DE=PROPELLANTS
E        0   DE=PROPELLANT STORAGE
                USE  DE=STORABLE ROCKET PROPELLANTS
F        7   DE=PROPELLANTS
***** YOUR TERM *****
G        3   DE=PROPELLER ALLOYS
        99    USE  DE=ALLOYS
        59    AND  DE=PROPELLERS
```

3.2.3.2 Stem Lists

By entering part of a search term followed by an asterisk, the system will display terms from the index with that common stem. The LOOK command preceding the stem is optional. A maximum of 26 terms may be displayed in a stem list. To reduce the default of 26 terms to a list, enter either:

Search term* number

or:

SET TERMS TO number

Example

```
1/CS=DT*

  .ITEMS.    TERMS
A       2  CS=DTMB. ACOUSTICS AND VIBRATION LAB
B       2  CS=DTMB. AERODYNAMICS DEPT
C       2  CS=DTMB. AERODYNAMICS LAB
D       1  CS=DTMB. AEROMECHANICS LAB
E       3  CS=DTMB. APPLIED MATHEMATICS LAB
F       4  CS=DTMB. HYDROMECHANICS LAB
G       5  CS=DTMB. STRUCTURAL MECHANICS LAB
H     177  CS=DTNSRDC
             USE  CS=DAVID W TAYLOR NAVAL SHIP RES AND DEV CENTER
I       4  CS=DTNSRDC. AVIATION AND SURFACE EFFECTS DEPT
J       4  CS=DTNSRDC. COMP MATH AND LOGISTICS DEPT
K       4  CS=DTNSRDC. COMPUTATION AND MATHEMATICS DEPT
L       8  CS=DTNSRDC. ENERGY R/D OFFICE
M       7  CS=DTNSRDC. MATERIALS DEPT
N      22  CS=DTNSRDC. PROPULSION AND AUXILIARY SYS DEPT
O       6  CS=DTNSRDC. SHIP ACOUSTICS DEPT
P       8  CS=DTNSRDC. SHIP MATERIALS ENGINEERING DEPT
Q       9  CS=DTNSRDC. SHIP PERFORMANCE DEPT
R       8  CS=DTNSRDC. STRUCTURES DEPT
S       1  CS=DTNSRDC. SYSTEMS DEVELOPMENT DEPT
T       1  CS=DTNSRDC. UNDERWATER EXPLOSIONS RESEARCH DIV
END OF TERMS WITH YOUR STEM
PICK LETTERS TO COMBINE
   1/SET TERMS TO 5

   1/CS=DT*

  .ITEMS.    TERMS
A       2  CS=DTMB. ACOUSTICS AND VIBRATION LAB
B       2  CS=DTMB. AERODYNAMICS DEPT
C       2  CS=DTMB. AERODYNAMICS LAB
D       1  CS=DTMB. AEROMECHANICS LAB
E       3  CS=DTMB. APPLIED MATHEMATICS LAB
MORE TERMS ARE AVAILABLE
PICK LETTERS TO COMBINE
```

To retrieve all documents with a common stem without first displaying and selecting from a stem list, enter ALL after the asterisk.

Example

with stem list

```
2/WELD*

  .ITEMS.    TERMS
A       6  DE=WELD JOINTS
             USE  DE=WELDED JOINTS
B       1  DE=WELD METAL
C       1  DE=WELDABILITY
```

```
D        6  DE=WELDED JOINTS
E       24  DE=WELDING
F        1  DE=WELDING POSITION
G       10  DE=WELDS
END OF TERMS WITH YOUR STEM
PICK LETTERS TO COMBINE
```

without stem list

```
2/WELD*ALL

7 TERMS WITH YOUR STEM WERE COMBINED
     30 ITEMS SAVED AS SET 2
```

3.2.3.3 Browse Lists

Index browsing operates exactly like stem selection, except that it will not stop when the common prefix is exhausted, but will continue until the requested number of index terms has been displayed.

Example

```
3/LOOK COMBUST**

   .ITEMS.     TERM
A        3   DE=COMBUSTIBILITY
                USE  DE=FLAMMABILITY
B       26   DE=COMBUSTION
C        7   DE=COMBUSTION CHAMBERS
D        1   DE=COMBUSTION DEPOSITS
E        6   DE=COMBUSTION EFFICIENCY
F        1   DE=COMBUSTION MODIFIERS
            13  USE  DE=ADDITIVES
            26  AND  DE=COMBUSTION
G        1   DE=COMBUSTORS
H        1   DE=COMDAC (COMMAND, DISPLAY AND CONTROL SYSTEM)
I        1   DE=COMMAND GUIDANCE
J        1   DE=COMMERCIAL APPLICATIONS
K        1   DE=COMMERCIAL AVIATION
L        2   DE=COMMERCIAL EQUIPMENT
M        1   DE=COMMERCIAL FISHING
N       15   DE=COMMERCIAL SHIPS
                USE  DE=MERCHANT VESSELS
O        1   DE=COMMERCIAL W GRADED ENGINE OILS
P        4   DE=COMMODITIES
Q       34   DE=COMMUNICATION AND RADIO SYSTEMS
```

```
R        8  DE=COMMUNICATION EQUIPMENT
S        3  DE=COMMUNICATION SATELLITES
T        1  DE=COMMUNICATIONS CHANNELS
               USE  DE=MULTICHANNEL COMMUNICATIONS
U        1  DE=COMMUNICATIONS CIRCUITS
               USE  DE=TELECOMMUNICATION CIRCUITS
V        4  DE=COMMUNICATIONS NETWORKS
W        1  DE=COMMUNICATIONS TERMINALS
X      100  DE=COMMUNIST COUNTRIES
Y        4  DE=COMMUNITIES
Z        1  DE=COMPARATIVE STUDIES
MORE TERMS ARE AVAILABLE
PICK LETTERS TO COMBINE
```

3.3 Free-Text Searching and SCAN Command

Most search requests will be satisfied with searches through the data base index. This is an extremely efficient method since it need not look at actual data records. There are some drawbacks to this method, however:

(1) Searches can only be satisfied if the document had been indexed by a Library cataloger under the specific search term; that is, the cataloger must have known *ahead of time* that a search would be required for this term. In an R&D environment, this is extremely difficult.

(2) Terms that are infrequently searched must be kept in the index even if rarely used, creating additional storage overhead.

(3) A search might be required on one of the data elements not picked up for indexing at all, such as limiting a search by number of pages or by personal author.

A sequential search which looks at the actual bibliographic records in the head file may be used to overcome these drawbacks. Scanning the words in titles of technical documents is a very rich source of information.

The SCAN command is used to perform a "free-text" search on a document set and is used when direct index searches do not provide sufficiently specific results.

Since SCAN scans a document set, the first step in any free-text search is to form a document set with a regular index search. If a document set is not cited in a SCAN command, the last set formed will be used. Therefore, one frequently begins a free-text search by "bringing down" the desired document set so that it immediately precedes the SCAN command. This can be accomplished with the FIND command.

Example

```
FIND 7
SCAN Ti TRIDENT
```

All the tests cited in a SCAN statement will be performed on one pass over a document set. For the sake of efficiency, all desired tests on a specific set should be entered in one SCAN command. If you do not want to combine the tests until seeing the results of the SCAN, connect the tests with the word ALSO instead of with a BOOLEAN expression.

Example

SCAN FG(1) PR ALSO IDT TRIDENT ALSO CS=NAVY*

A SCAN statement may total 1000 characters. Continue terminal lines with a +. A search value should be put in quotes if it conflicts with a reserved word or symbol.

Example

SCAN TI "BASIS"

or

SCAN TI "COMMUNICATIONS AND RADIO EQUIPMENT" AND RED +
SCAN. . . 19790815/19790912

3.3.1 Word and Character String Matching

In its simplest form, the SCAN command may be used to search for a given word or character string embedded anywhere in a field. For example,

SCAN 8 TI ENERGY

will cause BASIS to search the TI (title) field in all records belonging to set 8, putting the records that have the word ENERGY in their titles into the resulting set.

Several fields can be scanned at once. For example,

SCAN TI,NT ENERGY CONSERVATION

will cause BASIS to search the TITLE and NOTE fields in all records belonging to the last set for the string ENERGY CONSERVATION. More than one string can be searched for by entering each string separated from the next by a comma.

SCAN TI COAL,GAS

will cause the TI field to be scanned for the word COAL followed later by the word GAS.

One can ensure that multiple words occur in the same sentence by entering a request using the SS operator.

SCAN TI SS COAL,GAS

will cause the TI field to be scanned for the word COAL followed by GAS in the same sentence.

SCAN AU(2) JONES W E

scans the second occurrence only of the author field.

SCAN TI TOXI*

will scan the title field for any word starting with TOXI, such as Toxicology, Toxicity, Toxic, etc. This is equivalent to:

SCAN TI TOXI*ALL

The open character "*" lets a user perform suffix and infix searches as well as prefix (stem) searches. Use the form:

SCAN TI PRE*, *SUF, IN*FIX

Example

SCAN TI,NT COAL,*TION

would find records in which the word "COAL" was followed by a word ending with ". . .TION," such as "Coal Liquefaction" and "Coal Gasification."

Other "open" characters are:

*	matches any number of characters of any kind
@	matches any letter (A to Z)
!	matches any digit (0 to 9)
$	matches any letter or digit
–	matches any non alpha-numeric character
?	matches any character.

Examples

SCAN CN=@!!!	The call number must be one letter followed by 3 digits
SCAN DE CON@@	The DE field must contain a word starting with "CON" followed by exactly two more letters
SCAN IDT 12!!!	The identifier field must contain a word that is a number from 12000 to 12999
SCAN NT_Sponsored by_	The note field must contain the word phrase "sponsored by"

3.2.2. *Word and Character Distance Searching*

The following words and symbols may be used to specify distances between desired words:

INCLUDES	Includes the words or strings
INC	Includes the words or strings
SS	Includes the words or strings in the same sentence
SF	Includes the words or strings in the same field
W=n	The words must be n words apart
W<n	The words must be <n words apart
W>n	The words must be >n words apart
ADJ	The words must be 0 words apart
C=n	The words or strings must be n characters apart
C<n	The words or strings must be <n characters apart
C>n	The words or strings must be >n characters apart

Examples

SCAN TI ENERGY ADJ CONSERVATION	"Energy" must be immediately followed by "Conservation"
SCAN TI,NT,SS COAL<5 GAS* W>4+ SCAN. . .PROJECT	"Coal" must be followed within five words by a word starting with "Gas. . ." followed at least four words later by "Project"
SCAN CS A C=12 B<10C	The corporate source field must contain a word with an "A" followed by any 12 characters, then a "B," and within 10 characters a "C."

3.3.3. Existence Tests

You may search for the presence or absence of a field or a particular occurrence of a field.

Examples

SCAN FG(1) PR	Tests if the first occurrence of the field/group field is present
SCAN DD AB	Tests if the due date field is absent, indicating an indefinite loan
SCAN LS PR	Tests if the lost field is present

3.3.4. Equality Tests

An equality test checks to see if the contents of a field or subfield are exactly the same as a user-supplied phrase. This differs from the simple SCAN command, which tests to see if the user-supplied phrase occurs anywhere in a given field or subfield.

Examples

SCAN AU=JONES E A	Checks if the entire contents of the AU field is "JONES E A"
SCAN AU EQ JONES*	Checks if the AU field starts with "Jones. . ."
SCAN AU(*)NE Jones E A	Checks if any occurrence of the AU field starts with something other than "Jones E A"

3.3.5. Relational Tests

This uses the relational operators in the SCAN command.

Examples

SCAN PP LT 100	Are there fewer than 100 pages
SCAN FG(1) GE 0800	Is the first occurrence of the field group field a number that is greater than or equal to 0800.

3.3.6 Intrafield Comparisons

You may compare the contents of two fields using a relational operator or an equality test. In order to differentiate between a field mnemonic and a character string, precede the field mnemonic that may cause confusion with a pound sign "#".

SCAN CS(*) = IDT

will scan the corporate source field for any element that is equal to "IDT".

SCAN CS(*) = #IDT(*)

will scan the corporate source field for any element that is the same as any element in the identifier field.

Examples

SCAN RED GE #RD	Is the record entry date greater than or equal to the reclassification date
SCAN SE=#CN	Is the report number the same as the call number

3.4 Special Search Modes

3.4.1 Universe Search Mode

It is sometimes useful to limit your search to a portion of the data base. For example, if you were interested in work sponsored or performed by the Navy, you would form a set of all Navy-authored reports and declare that set to be universe. Each set selected thereafter will be effectively ANDed with the universe. Use the form:

SET UNIV(ERSE) = document set no.

To "turn off" the universe:

SET UNIV OFF

```
3/CS=NAVY DEPT

   341 ITEMS SAVED AS SET 3
4/SET UNIV=3

4/ENERGY CONSERVATION

   25 ITEMS SAVED AS SET 4
IN YOUR DATA BASE SUBSET, LINE=3
```

3.4.2 Hierarchical Search Mode

This mode limits the "universe" of a search to the last set of documents selected, so that the universe gets smaller and smaller with each selection.

Use the form:

SET HIER = document set no.

or

SET HIER ON (defaults to last set formed)

To "turn off," use the form:

SET HIER OFF

To see the "status" of special search modes, use the form:

LIST STATUS

Example

```
5/SET HIER ON

   5/LIST STATUS


ON-LINE LINE LENGTH            80
OFF-LINE LINE LENGTH           80
INDENTATION                    5
SEARCH SUBSET (UNIV)           OFF
HIERARCHICAL SEARCHING MODE    ON
SEQ SEARCH WARNING MESSAGE     OFF
PAUSE COUNT                    1000000
ADJACENT TERMS                 6
USAGE OF LINKS                 OFF
USAGE OF PAGING                ON
SHOW ITEM COUNT                ON
SHOW SEQUENCE NUMBERS          OFF
SHOW FIELD NUMBERS             OFF
SHOW FIELD HEADINGS            ON
SHOW FIELD UNITS               OFF
DEBUG                          OFF
SUPPRESS UNIV IN TERM LISTS    OFF
USE DEFINED VARIABLE VALUE     OFF
```

3.5 **Sample Search** (on "Propulsion Plant Efficiency")

```
1/BROWSE                    (enter the Thesaurus module)


/ENTER TERM
    /GAS TURBINES

GAS TURBINES
  BT   ENGINES
  BT   TURBINES
  BT   TURBOMACHINERY
```

```
  UF    INDUSTRIAL GAS TURBINES
  UF    SMALL GAS TURBINE
  NT *  MARINE GAS TURBINES

ENTER TERM
    /MARINE GAS TURBINES

MARINE GAS TURBINES
  BT    ENGINES
  BT    GAS TURBINES
  BT    TURBINES
  BT    TURBOMACHINERY
  UF    SHIP TURBINES
  NT    AUXILIARY GAS TURBINES(MARINE)
  NT    PROPULSION GAS TURBINES(MARINE)

ENTER TERM
    /MARINE STREAM TURBINES

MARINE STEAM TURBINES
  BT    STEAM TURBINES
  BT    TURBINES
  BT    TURBOMACHINERY
  UF    SHIP TURBINES
  NT *  AUXILIARY STEAM TURBINES(MARINE)      ("*" means term
  NT    PROPULSION STEAM TURBINES(MARINE)       has narrower
                                                terms still)
ENTER TERM
    /AUXILIARY STEAM TURBINES(MARINE)

AUXILIARY STEAM TURBINES(MARINE)
  BT    MARINE STEAM TURBINES
  BT    STEAM TURBINES
  BT    TURBINES
  BT    TURBOMACHINERY
  NT    SHIP SERVICE TURBOGENERATORS

ENTER TERM
    /MARINE DIESEL ENGINES

MARINE DIESEL ENGINES
  SN    INCL. MEDIUM OR HIGH SPEED DIESEL ENGINES MANUFACTURED
  SN    OR ADAPTED FOR SHIPBOARD USE.
  BT    DIESEL ENGINES
  BT    ENGINES
  BT    INTERNAL COMBUSTION ENGINES
  BT    PISTON ENGINES
  BT    RECIPROCATING ENGINES
  NT    AUXILIARY DIESEL ENGINES(MARINE)
  NT    PROPULSION DIESEL ENGINES(MARINE)
```

```
ENTER TERM
    /FUEL OILS

FUEL OILS
  BT    ENERGY SOURCES
  BT    FOSSIL FUELS
  BT    FUELS
  BT    MATERIALS
  BT    OILS
  BT    ORGANIC MATERIALS
  BT    PETROLEUM PRODUCTS
  NT  * DIESEL FUELS
  NT    HEATING OILS
  NT    NAVY DISTILLATE FUELS
  NT    RESIDUAL FUELS

ENTER TERM
    /DIESEL FUELS

DIESEL FUELS
  BT    ENERGY SOURCES
  BT    FOSSIL FUELS
  BT    FUELS
  BT    FUEL OILS
  BT    MATERIALS
  BT    OILS
  BT    ORGANIC MATERIALS
  BT    PETROLEUM PRODUCTS
  UF    DIESEL OIL
  NT    DIESEL FUEL MARINE
  NT    MARINE DIESEL FUELS
  RT    RESIDUAL FUELS

ENTER TERM
    /BASIS                    (return to retrieval module)

   1/MARINE GAS TURB*         (stem search)

  .ITEMS.     TERMS
A         1   DE=MARINE GAS TURBINE GENERATOR SETS
B        18   DE=MARINE GAS TURBINES
END OF TERMS WITH YOUR STEM
PICK LETTERS TO COMBINE
   1/ALL

      18 ITEMS SAVED AS SET 1
CONTINUE PICKS OR REQUESTS
   2/MARINE STEAM TURBINES

      28 ITEMS SAVED AS SET 2
   3/MARINE DIESEL ENGINES
```

```
      14 ITEMS SAVED AS SET 3
   4/DIESEL FUEL MARINE

      15 ITEMS SAVED AS SET 4
   5/NAVY DISTILLATE FUELS

       6 ITEMS SAVED AS SET 5
   6/FUEL CONSUMPTION

      48 ITEMS SAVED AS SET 6
   7/LOOK COMBUSTION                    (adjacent term search)


  .ITEMS.     TERMS
A         1   DE=COMBINED CYCLE ENGINES
B         4   DE=COMBINED CYCLE POWER PLANTS
C         3   DE=COMBUSTIBILITY
                USE  DE=FLAMMABILITY
D        26** DE=COMBUSTION
E         7   DE=COMBUSTION CHAMBERS
F         1   DE=COMBUSTION DEPOSITS
MORE TERMS ARE AVAILABLE
PICK LETTERS TO COMBINE
   7/MORE


  .ITEMS.     TERMS
A         6   DE=COMBUSTION EFFICIENCY
B         1   DE=COMBUSTION MODIFIERS
          13   USE  DE=ADDITIVES
          26   AND  DE=COMBUSTION
C         1   DE=COMBUSTORS
D         1   DE=COMDAC (COMMAND, DISPLAY AND CONTROL SYSTEM)
E         1   DE=COMMAND GUIDANCE
F         1   DE=COMMERCIAL APPLICATIONS
MORE TERMS ARE AVAILABLE
PICK LETTERS TO COMBINE
   7/A

       6 ITEMS SAVED AS SET 7
CONTINUE PICKS OR REQUESTS
   8/ENGINE EFFICIENCY

       5 ITEMS SAVED AS SET 8
   9/LIST                       (lists all sets created so far)
```

```
  .ITEMS. LINE      REQUEST
*      18    1/  DE=MARINE GAS TURB(STEM) A,B
*      28    2/  MARINE STEAM TURBINES
*      14    3/  MARINE DIESEL ENGINES
*      15    4/  DIESEL FUEL MARINE
*       6    5/  NAVY DISTILLATE FUELS
*      48    6/  FUEL CONSUMPTION
*       6    7/  DE=COMBUSTION EFFICIENCY
*       5    8/  ENGINE EFFICIENCY
   9/FIND FG=1320 OR FG=2100 OR FG=1315
*     122    9/  FG=1320
*      40   10/  FG=2100
*     305   11/  FG=1315
*     421   12/  FG=1320 OR FG=2100 OR FG=1315
  13/SCAN TI ENERGY,ADVANCED    (free-text search of title field)


*       4   13/  SCAN  12  TI ENERGY,ADVANCED
  14/SCAN 13 TI,MDE,DE CYCLE*


*       0   14/  SCAN  13  TI,MDE,DE CYCLE*
  15/((1 OR 2 OR 3 OR 4 OR 5 OR 6)AND(7 OR 8 OR 9)OR 13 OR 14)
                                (Boolean expression)
     24 ITEMS SAVED AS SET 15
  16//2 NOLIST                  (list search results in format #2)


  THE FOLLOWING ARE PARAMETERS TO BE SATISFIED
  LINE?15

C34628                    LIBR: C                    02/1979 REC: 3461
     SURFACE SHIP RADIATED NOISE MEASUREMENT (SSRNM) REPORT, USS
     ENGLAND (CG-22), TEST DATE: 1 DECEMBER 1978


C34686                    LIBR: C                    03/1979 REC: 5536
     SURFACE SHIP RADIATED NOISE MEASUREMENT (SSRNM) REPORT, USS
     TUSCALOOSA (LST-1187), TEST DATA: 12 DECEMBER 1978.


          REMAINDER OF LISTING OMITTED
```

4. Output

4.1 Format Options

Six bibliographic formats for listing literature search results are available. The listings may be printed either at your terminal or on a high-speed off-line printer. Samples of each format are shown in Figure 5.

The six formats sort records numerically by call number in order to facilitate physical retrieval of the desired documents. Formats 5 and 6, however, may be sorted in descending chronological order by publication date. The following are the possible format options (note that all format requests are preceded by a slash "/"):

For Terminal Listings	For Off-line Listings
/1	/1 OFFLINE
/2	/2 OFFLINE
/3	/3 OFFLINE
/4	/4 OFFLINE
/5	/5 OFFLINE
/5 DATE	/5 DATE OFFLINE
/6	/6 OFFLINE
/6 DATE	/6 DATE OFFLINE

After entering your format option, the system will prompt you for the document set number you wish to list. For off-line requests, you will also be asked to supply a terminal ID. Some of your possible responses are:

Terminal ID	Location of Printer
C	Central Site (Math Lab)
001	Printer at Data Systems Division
111	Printer in Code 15's terminal room
011	Printer at Annapolis
C, FC=HH	For Xerox at Central Site

Example

```
16//5 DATE OFFLINE

THE FOLLOWING ARE PARAMETERS TO BE SATISFIED
LINE?1

TERMINAL ID? 001
```

Figure 5 – Format Options for Listing Literature Search Results

/1

```
VM 753.S 671978I          LIBRARY: C/REF AN          RECORD: 4275

VM 753.S 671978M          LIBRARY: C/REF AN          RECORD: 4279

VM 753.S 671978N          LIBRARY: C/REF AN          RECORD: 4280
```

Fields included: Call Number, Library, Record ID

/2

```
VM 753.S 671978I          LIBR: C/REF AN          00/1979 REC: 4275
     USEFULNESS OF QUASI-STEADY APPROACH FOR ESTIMATION OF PROPELLER
     BEARING FORCES. IN PROPELLERS 78, SYMPOSIUM, VIRGINIA BEACH, VA,
     1978

VM 753.S 671978M          LIBR: C/REF AN          00/1979 REC: 4279
     INFLUENCE OF PROPELLER MEAN LOADS ON PROPULSION SHAFT ALIGNMENT.
     IN PROPELLERS 78, SYMPOSIUM, VIRGINIA BEACH, VA, 1978
```

Fields included: Call Number, Library, Record ID, Publication Date, Title

/3

```
VM 753.S 671978I          LIBR: C/REF AN          00/1979 REC: 4275
     USEFULNESS OF QUASI-STEADY APPROACH FOR ESTIMATION OF PROPELLER
     BEARING FORCES. IN PROPELLERS 78, SYMPOSIUM, VIRGINIA BEACH, VA,
     1978

     DESCRIPTORS: PROPELLERS(MARINE)-LOADS(FORCES); SHIP WAKE;
     PROPELLER SHAFTS
     JAPAN
```

Fields included: Call Number, Library, Record ID, Publication Date, Title, Descriptors

/4

```
     VM 753.S 671978I          LIBRARY: C/REF AN
USEFULNESS OF QUASI-STEADY APPROACH FOR ESTIMATION OF PROPELLER BEARING
FORCES. IN PROPELLERS 78, SYMPOSIUM, VIRGINIA BEACH, VA, 1978
     00/1979          PP.20          SASAJIMA T
     SNAME-T/R-S-6-P-11
     FOR PRIMARY DOCUMENT, SEE VM 753.S 671978, P.11-1 - 11-20.
```

Fields included: Call Number, Library, Record ID, Publication Date, Title, Special Form, Pagination, Author Main Entry, Report Number, Note

```
/5      VM 753.S 671978I              LIBRARY: C/REF AN
USEFULNESS OF QUASI-STEADY APPROACH FOR ESTIMATION OF PROPELLER
BEARING
FORCES. IN PROPELLERS 78, SYMPOSIUM, VIRGINIA BEACH, VA, 1978
     00/1979          PP.20              SASAJIMA T
     SNAME-T/R-S-6-P-11
     FOR PRIMARY DOCUMENT, SEE VM 753.S 671978, P.11-1 - 11-20.

     DESCRIPTORS: PROPELLERS(MARINE)-LOADS(FORCES); SHIP WAKE;
     PROPELLER SHAFTS
     JAPAN
     IDENTIFIERS: BEARING FORCES
```

Fields included: Call Number, Library, Record ID, Publication Date, Title, Special Form, Pagination, Author Main Entry, Report Number, Note, Descriptors, Identifiers

```
     VM 753.S 671978I              LIBRARY: C/REF AN
SASAJIMA T                        SNAME
MITSUBISHI HEAVY INDUSTRIES LTD(JAPAN)
/6   USEFULNESS OF QUASI-STEADY APPROACH FOR ESTIMATION OF
PROPELLER
     BEARING FORCES. IN PROPELLERS 78, SYMPOSIUM, VIRGINIA BEACH,
VA,
     1978
     00/1979 PP.20      SNAME-T/R
                        -S-6-P-11
     FOR PRIMARY DOCUMENT, SEE VM 753.S 671978, P.11-1 - 11-20.

     DESCRIPTORS: PROPELLERS(MARINE)-LOADS(FORCES); SHIP WAKE;
     PROPELLER SHAFTS
     JAPAN
     IDENTIFIERS: BEARING FORCES
```

Fields included: Call Number, Library, Record ID, Publication Date, Title, Special Form, Pagination, Author Main Entry, Report Number, Note, Descriptors, Identifiers, Publisher, Corporate Source, Authors

4.2 SORT Command

After retrieving a document set and before reviewing the results via the DISPLAY or PRINT commands, it is sometimes helpful to first sort the document records in some meaningful order. The default order of records in a document set is numerical by RECORD ID. Document sets that are to be output in one of the six format options should not be sorted by the user, since the format program automatically sorts the set by call number or, if specified, in descending chronological order by publication date.

With the SORT capability, a user can sort a document set defined by any previous line number in either ascending or descending order by any field, by occurrence within a field, or by any combination of fields.

Examples

SORT TI	Will sort the last document set alphabetically by title
SORT Line=7 TI	Will sort the document set defined by line 7 alphabetically by title

SORT Line=2 MDE, PD, TI	Will sort line 2 by major descriptors; within major descriptors by publication date; and then by title
SORT PD/D, TI/D	Will sort the last set in descending chronological order of publication date; and within each date, in descending alphabetical order of title (Z to A)
SORT FG(1) AU(1)	Sorts on the first occurrence of the field/group and author fields
SORT DE(*)	Sorts on each subject descriptor** (a title with three subjects will appear three times)
SORT TI(1:80)	Sorts on the first 80 characters of the title (the default is the first 60 characters)
SORT CS(*)	Sorts on all corporate authors
SORT TI(1)(1:150)/D	Sorts in reverse alphabetical order on the first 150 characters of the first title

The DROP parameter may be appended to the end of a SORT statement to drop from the output display records that do not contain the major (first) sort key. If DROP is not used, the records not containing the major sort key will appear first in the listing or, if sorted in descending order, will appear last.

Examples

SORT FG(1) DROP	Will sort records by the first occurrence of the field/group field and will drop from the set any records for which the first FG was omitted
SORT Line=1 PD/D DROP	Will sort the first document set so that most current titles will be placed first; records showing no publication date will be dropped

4.3 DISPLAY Command

The fastest way to review selected records at your terminal is with the DISPLAY command. Use the form:

DISPLAY document set no. fields FOR item numbers

If the document set number is omitted, the last set created is displayed. The fields may be field mnemonics, field numbers, or ALL. The item numbers may be ALL or a range of numbers.

Examples

DISPLAY ALL FOR ALL	Displays all fields for all records in the last set
DISPLAY=2, TI,CN FOR 1-5	Displays titles and call numbers for the first five records of the second document set

**The asterisk should be used for all sorts on repeating fields.

DISPLAY ALL for 10-20	Displays all fields for items 10 to 20 of the last document set

Another important function of DISPLAY is to print a single record from the head file. Use the DISPLAY command followed by the record's ID in parentheses followed by the fields desired.

Example

DISPLAY (1238) ALL	Displays all fields for record #1238
DISPLAY (400237) BR,DD	Displays the borrower and due date for record #400237

4.3.1 Mapped Fields

The Library data base has three "mapped fields."

- BIB for bibliographic data
- CTR for center report data
- INV for inventory data

When you DISPLAY a "mapped field," you actually display a group of fields all having a common attribute.

BIB shows ID, Major Descriptors, Specific Descriptors, and Identifiers. BIB would normally be used to "test" a document set for accuracy before outputting your search results in a format option.

Example

```
  25/FIND TYP=FR-CTR            (code for formal reports)

*      18   25/  TYP=FR-CTR
  26/DISPLAY BIB FOR 3


ITEM 3

RECORD ID            404
TITLE                EVALUATION OF SINGLE PASS SEAWATER REVERSE OSMOSIS MODULES
    AND PRETREATMENT TECHNIQUES, PHASE 2
MAJOR DESCRIPTORS    DESALINATION-TEST METHODS;WATER TREATMENT-SHIPS;REVERSE
    OSMOSIS-SHIPS;SEA WATER-ULTRAFILTRATION MEMBRANES
SUBJECT DESCRIPTORS:MODULAR CONSTRUCTION;FUSED SILICA;SILICATES;DESTRUCTION;
    COLIFORM BACTERIA;VALUE;ELECTROLYSIS;HYDROLYSIS;PH FACTOR;DRINKING WATER;
    CHLORINATION
IDENTIFIERS          POTABLE WATER;SINGLE PASS;PRETREATMENT;BACTERIOLOGICAL
    SPECIES
```

CTR shows the digits from a formal Center Report number (omitting the acronym), the title, and any circulation restriction.

Example

```
  26/DISPLAY CTR FOR 3


ITEM 3

TRANSPOSED REPORT NR:77-0011
TITLE              EVALUATION OF SINGLE PASS SEAWATER REVERSE OSMOSIS MODULES
    AND PRETREATMENT TECHNIQUES, PHASE 2
```

INV shows location and copy information, publication date, and item identification. This would normally be used by the Acquisitions or Cat loging Staff to see the number of copies owned for an existing title in the collection.

Example

```
  26/ID=663

     1 ITEM  SAVED AS SET 26
  27/DISPLAY INV


ITEM 1

RECORD ID            663
CALL NUMBER          TJ 151.M 31975
TITLE                MACHINERY'S HANDBOOK A REFERENCE BOOK FOR THE MECHANICAL
    ENGINEER, DRAFTSMAN, TOOLMAKER AND MACHINIST. 20TH EDITION
PUBLICATION DATE     19750000
LIBRARY CARDEROCK    C
CARDEROCK COPIES     5,6,8,9
LIBRARY ANNAPOLIS    AN
ANNAPOLIS COPIES     1-4,7,10,11
```

The format of the display may be modified by SETting certain parameters. Figure 6 shows a sample DISPLAY.

Example

SET HEADING LABELS ON/OFF	Supresses field lables such as "TITLE"; "AUTHORS:," etc.
SET FIELD NUMBERS ON/OFF	Used after setting headings OFF to replace field labels with field numbers
SET ITEM ON/OFF	Turns off item count that normally precedes each record display
SET PAUSE TO #	Causes display of records to halt after a certain number before continuing; this is intented for CRT users

Figure 6 – Sample DISPLAYS

```
  28/SORT PD/D CS TI

*      24   28/  15 SORT=PD/D CS TI
  29/DISPLAY PD,CS,TI FOR 1-2
```

Sorts 16 records in descending chronological order, by corporate source, and by title. Displays sorted set to show publication date, corporporate source, and title for two records.

```
ITEM 1

PUBLICATION DATE     19790300
CORPORATE SOURCE     NAVAL OCEAN SYSTEMS CENTER
TITLE                SURFACE SHIP RADIATED NOISE MEASUREMENT (SSRNM) REPORT,
    USS TUSCALOOSA (LST-1187), TEST DATA: 12 DECEMBER 1978.

ITEM 2

PUBLICATION DATE     19790300
CORPORATE SOURCE     NAVAL OCEAN SYSTEMS CENTER
TITLE                SURFACE SHIP RADIATED NOISE MEASUREMENT (SSRNM) REPORT,
    USS BROOKE (FFG-1), TEST DATE: 12 JANUARY 1979
  29/SET ITEM OFF

  29/SET HEADINGS OFF


  29/SET FIELD NUMBERS ON

  29/DISPLAY TI FOR 1-3

   9. SURFACE SHIP RADIATED NOISE MEASUREMENT (SSRNM) REPORT, USS TUSCALOOSA
    (LST-1187), TEST DATA: 12 DECEMBER 1978.
   9. SURFACE SHIP RADIATED NOISE MEASUREMENT (SSRNM) REPORT, USS BROOKE
    (FFG-1), TEST DATE: 12 JANUARY 1979
   9. SURFACE SHIP RADIATED NOISE MEASUREMENT (SSRNM) REPORT, USS BUCHANAN
    (DDG-14), TEST DATE: 9 JANUARY 1979
  29/SET PAUSE TO 2

  29/DISPLAY TI FOR ALL

   9. SURFACE SHIP RADIATED NOISE MEASUREMENT (SSRNM) REPORT, USS TUSCALOOSA
    (LST-1187), TEST DATA: 12 DECEMBER 1978.
   9. SURFACE SHIP RADIATED NOISE MEASUREMENT (SSRNM) REPORT, USS BROOKE
    (FFG-1), TEST DATE: 12 JANUARY 1979
DO YOU WANT TO SEE THE NEXT ITEM (YES NO)? YES

   9. SURFACE SHIP RADIATED NOISE MEASUREMENT (SSRNM) REPORT, USS BUCHANAN
    (DDG-14), TEST DATE: 9 JANUARY 1979
   9. SURFACE SHIP RADIATED NOISE MEASUREMENT (SSRNM) REPORT, USS ENGLAND
    (CG-22), TEST DATE: 1 DECEMBER 1978
DO YOU WANT TO SEE THE NEXT ITEM (YES NO)? NO
```

4.4 PRINT Command

DISPLAY is used to print results at your terminal. To print search results on an off-line high-speed printer, use either the PRINT command or one of the six format options. Users should understand the difference between generating an off-line listing with the PRINT command and with one of the six format options. With PRINT or DISPLAY, the data elements for each record are merely listed with one field to a line. The six format options arrange the fields on the page similarly to a standard catalog card. For user bibliographies, the six format options are preferable to DISPLAY and PRINT listings.

The syntax for DISPLAY and PRINT are identical.

Example

PRINT ALL FOR ALL	Prints off-line all fields in all the records of the last document set
PRINT=4 TI,ID,CS FOR 10-20	Will print the title, Record ID, and corporate authors for the tenth through the twentieth records in document set number 4
PRINT(7012)ALL	Prints all fields for record #7012

Unlike the DISPLAY command and the six format options, PRINT allows a user to title bibliographies with the TITLE command. Issue the TITLE Command followed by the words of the title directly before the PRINT command.

Example

5/ TITLE HYDRODYNAMICS RESEARCH IN THE NAVY

5/ PRINT = 2 ALL FOR ALL

If you should request a PRINT and later wish to cancel it, enter:

CANCEL

PRINTS will be automatically routed to the off-line printer at Central Site at the end of your terminal session unless they are specifically routed to another printer. To ROUTE your PRINTS to another printer, enter the following while still in BASIS:

ROUTE(RID) = "Terminal ID"

This may be entered following each PRINT command, or after several PRINTS have been issued.

Some possible values of Terminal ID are:

001 for Data Systems' printer
111 for Code 15's printer
011 for Annapolis' printer

Example

```
1/FIND FLUID FLOW AND PD GT  19790000

*     115     1/  FLUID FLOW
*      95     2/  PD GT 19790000
*       4     3/  FLUID FLOW AND PD GT 19790000

4/TITLE VERY CURRENT WORK ON FLUID FOW

4/PRINT BIB FOR ALL
```

```
ORDER NUMBER 790927-122201-CRAD     -002-001 WITH 4 OF 4 ITEMS
WILL BE PRINTED OFF-LINE
    4/ROUTE(RID)="001"

PLEASE ENTER YOUR MAILING ADDRESS TO LABEL YOUR PRINTS.
SEPARATE EACH LINE WITH A COLON.
ADDRESS...SHERRY MARTIN CODE 6080


SHERRY MARTIN CODE 6080

    4/END


DTNSRDC LIBRARY DATA BASE USAGE TERMINATED

GOODBYE


COMMAND- LOGOUT

CPA      59.961 SEC
SS       93.187 SEC
EST. SYSTEM COST  $   13.54

EST. CONNECT COST $   10.83
CONNECT TIME    1 HRS.    5 MIN.
 09/27/79  LOGGED OUT AT 13.26.02.
```

The printout for the above Search appears in Figure 7.

5. Circulation Searches

Printed listings are available at each circulation desk showing borrower and due date information for every circulating item. However, if a searcher wishes to inquire on-line whether or not a publication of interest is checked out, he should use one of two possible formats:

(i) Perform a stem search on the prefix of the circulation call number. This is the same number as the cataloging record call number minus the copy number. For conference papers and other analytics, the call number used should be that of the bound set and not that of the individual paper. After identifying the call number from the cataloging record of interest, enter:

CCN = call number*

or

CCN = call number*ALL

```
                                                    VERY CURRENT WORK ON FLUID FLOW
ORDER NUMBER 790920-133637-CRMD     -001-001              PAGE 1      SET 3 WITH 4 OF 4 ITEMS


ITEM 1

RECORD ID               4902
TITLE                   HULL ROUGHNESS AND ASSOCIATED BOUNDARY LAYER FLOW
MAJOR DESCRIPTORS       SHIP HULLS-ROUGHNESS; SHIP HULLS-BOUNDARY LAYER FLOW
SUBJECT DESCRIPTORS:SKIN FRICTION; MEASUREMENT; FRIGATES; FOULING; CLEANING;
    GREAT BRITAIN
IDENTIFIERS             SH: ARIADNE(UK)

ITEM 2

RECORD ID               7074
TITLE                   SOUND PRODUCTION DUE TO LARGE-SCALE COHERENT STRUCTURES
MAJOR DESCRIPTORS       TURBULENT FLOW; SOUND PRESSURE; MATHEMATICAL MODELS
SUBJECT DESCRIPTORS:COHERENCE; AMPLITUDE; SHEAR FLOW; ACOUSTIC FIELDS
IDENTIFIERS             LIGHTHILLS THEORY

ITEM 3

RECORD ID               7076
TITLE                   ON SOUND RADIATION FROM THE TRAILING EDGE OF AN ISOLATED
    AIRFOIL IN A UNIFORM FLOW
MAJOR DESCRIPTORS       SOUND TRANSMISSION-TWO DIMENSIONAL AIRFOILS
SUBJECT DESCRIPTORS:TRAILING EDGES; UNIFORM FLOW; BOUNDARY LAYER FLOW

ITEM 4

RECORD ID               7077
TITLE                   WIND TUNNEL STUDY ON THE EFFECTS OF ACOUSTICAL
   . DISTURBANCES ON CONTROLLED LAMINAR FLOW
MAJOR DESCRIPTORS       ACOUSTICS-LAMINAR FLOW
SUBJECT DESCRIPTORS:WIND TUNNEL TESTS; LAMINAR BOUNDARY LAYER; CONTROL; CROSS
    FLOW

   THIS LIST OF PRINTS IS BASED ON                    PLEASE MAIL THIS PRINTOUT TO

     .ITEMS. LINE        REQUEST                      SHERRY MARTIN CODE 6080
     *     115    1/  FLUID FLOW
     *      95    2/  PD GT 19790000
     *       4    3/  FLUID FLOW AND PD GT 19790000  ORDER NUMBER 790920-133637-CRMD  -001 (1 PRINTS).
```

Figure 7 – Sample PRINT

Example

Who has checked out the seven copies of Machinery's Handbook?

```
1/CCN=TF J 151.M 31975*ALL

7 TERMS WITH YOUR STEM WERE COMBINED
    7 ITEMS SAVED AS SET 1
2/DISPLAY CRS,CCN,BR FOR 1-2


ITEM 1

CATALOG RECORD ID    663
CIRCULATION CALL NR TJ 151.M 31975C2
BORROWER'S NAME      ALIBERTI J A

ITEM 2

CATALOG RECORD ID    663
CIRCULATION CALL NR TJ 151.M 31975C3
BORROWER'S NAME      ALIBERTI J A
```

(ii) Since every circulation record contains a corresponding cataloging record ID, you could also search on the corresponding record number:

CRS = cataloging record ID

Example

```
2/CRS=663

   8 ITEMS SAVED AS SET 2
3/DISPLAY CRS,CCN,BR FOR 3-4


ITEM 3

CATALOG RECORD ID    663
CIRCULATION CALL NR TJ 151.M31975C4
BORROWER'S NAME      CRAIG O E

ITEM 4

CATALOG RECORD ID    663
CIRCULATION CALL NR TJ 151.M 31975C5
BORROWER'S NAME      TATUM S L
```

6. PROFILE

Because of the recurring nature of many functions, the library system provides a capability called PROFILE. Following are the PROFILE Capabilities:

- Allows users to save search statements, output requests, and other repetitive user text
- Allows users to save a search session for later completion
- Allows sophisticated users to "program" the system to perform simple repetitive tasks

There are two PROFILE files available to searchers:

(i) Data base PROFILE file

(ii) Your user's PROFILE file

The data base PROFILE file consists of profiles set up by the Data Base Administrator (DBA) for use by searchers. The six format options, in fact, are profiles stored on the data base PROFILE file. This file can only be altered by the DBA.

Every user is also provided a profile file associated with his or her BASIS ID that may be used for setting up and executing one's own profiles. Sections 5.1 through 5.4.3 describe procedures for creating and manipulating personal PROFILE files.

6.1 PROFILE Creation

PROFILES may be created with one of three commands: /SUSPEND, /CREATE, or /MAKE.

6.1.1 SUSPEND Command

This command is used to save all user input from a terminal session for total replay. Enter:

/SUSPEND

or:

PROFILE SUSPEND

or:

/SUSPEND Profile name of 1 to 20 characters

The slash (/) is a shortcut for typing out PROFILE and is used to get into the PROFILE module. If no profile name is supplied by the user, the system automatically supplies the name "SUSPEND*SAVE."

Example

```
3//SUSPEND TRAINING SESSION

"SUSPEND*TRAINING SESSION"
SAVED WITH 4 LINES OF TEXT
```

```
   3/FIND FROGS

*        0     3/  FROGS
   4//SUSPEND

 "SUSPEND*SAVE"
SAVED WITH 6 LINES OF TEXT
```

6.1.2 SAVE Command

While SUSPEND captures all user input from the terminal session, /SAVE captures user input entered only since the last user-supplied /CREATE, /NEW, or /SAVE command. If none of these three commands had been previously entered, /SAVE will capture all user input from the beginning of the session. If no user-supplied profile name follows a SAVE command, the system automatically supplies the profile name of SAVE. Enter:

/SAVE

or:

/SAVE Profile Name

or:

PROFILE SAVE Profile Name

6.1.2.1 NEW Command

/NEW notes the start of a possible new profile that may be saved via the /SAVE command. When entered, the line numbers are reset to one. When performing searches for several different users, /NEW is a handy way of "throwing away" the sets of a previous search before beginning a new one.

Example

```
(user input underlined)

   1/FIND FROGS AND TOADS

*        0     1/  FROGS
*        0     2/  TOADS
*        0     3/  FROGS AND TOADS
   4//NEW

   1/FIND NAVAL VESSELS AND ENERGY CONSERVATION END NOLIST

*       16     3/  NAVAL VESSELS AND ENERGY CONSERVATION END NOLIST
   4/DISPLAY TI,ID,PD,AU,CS FOR 1-2

ITEM 1
```

```
TITLE                PROPOSAL FOR A STUDY OF TOTAL ENERGY SYSTEMS FOR NA VY
    SHIPS;ENERGY SYSTEMS FOR NAVY SHIPS
RECORD ID            46
PUBLICATION DATE     19750200
CORPORATE SOURCE     GARRETT CORP(AZ) AIRESEARCH MFG DIV;NSRDC. ENERGY R/D
    OFFICE

ITEM 2

TITLE                U.S. NAVY CARRIER WASTEWATER PURIFICATION AND RECYCLE
    SYSTEM-COST EFFECTIVENESS ANALYSIS OF COMPETING METHODS
RECORD ID            2510
PUBLICATION DATE     19770800
PERSONAL AUTHOR      PHULL K K;LINDSTEN D C
CORPORATE SOURCE     ARMY MOBILITY EQUIPMENT RES AND DEV CENTER;DAVID W TAYLOR
    NAVAL SHIP RES AND DEV CTR(ANNAPOLIS)
   4//SAVE ENERGY EFFICIENT SHIPS


                    "ENERGY EFFICIENT SHIPS"
                  SAVED WITH 2 LINES OF TEXT
```

6.1.2.2 CREATE Command

/CREATE, like /NEW, notes the start of a possible new profile that may be later captured via /SAVE. /CREATE, however, does not reset the line number to one.

6.1.3 MAKE Command

/SUSPEND and /SAVE capture a regular retrieval session. /MAKE allows a user to build a profile for later execution without actually retrieving or listing any document sets. The profile is created through the PROFILE/REPORT editor. Profile lines are entered one at a time after a system prompt. "=" is entered to leave the profile ADD mode, and EXIT is entered to leave the PROFILE editor. See 5.4.2 for PROFILE editing.

Example

```
                (user input underlined)

              4//MAKE WELDING RESEARCH IN THE NAVY

          END ADD WITH =
           100 =FIND WELD*ALL AND CS=NAVY DEPT

           110 =/5 DATE

           120 = =

          == EXIT
```

6.2 PROFILE Parameters

PROFILE parameters may be included in the text of a profile to allow for the substitution of different field values at execution time. The searcher has already encountered PROFILE parameters in requesting one of the six search output formats. Remember how the system prompted the user to enter his "Line Number?" and "Terminal ID?"

A parameter name is put in [square brackets]. When a user enters any data in [square brackets], the contents of the brackets are considered to be a profile parameter name. This name may be 1 to 60 characters long. Profile parameters may be inserted in profiles that are created in the "capture mode" via the /SUSPEND or /SAVE commands, or in the profile ADD mode via the /MAKE command.

Example

Profile parameters inserted in the capture mode:

```
     (user input underlined)

   4//NEW

   1/FIND [DESCRIPTOR]

DESCRIPTOR?  FLUID FLOW

   1/ FIND    FLUID FLOW
*     115     1/  FLUID FLOW
   2/PD GT [PUBLICATION DATE]

PUBLICATION DATE?19760000

   2/ PD GT 19760000
      1094 ITEMS SAVED AS SET 2
   3/CS=NAVY DEPT

      341 ITEMS SAVED AS SET 3
   4/(1 AND 2 AND 3)

      18 ITEMS SAVED AS SET 4
   5//6 OFFLINE

THE FOLLOWING ARE PARAMETERS TO BE SATISFIED
LINE?4

TERMINAL ID? 001

   5/ SORT (LINE=4) CN KEEP(SUB="SUBS")DROP NOSET
   5/ REPORT EXECUTE "6" PUT.FILE="OUTPUT"
```

```
ENTER REPORT DIRECTIVE
    / XEQ ROUTE,OUTPUT,DC=PR,TID=001,FID=CRSM
   5//SAVE CURRENT NAVY PIC -A-TOPIC

 "CURRENT NAVY PIC-A-TOPIC"
SAVED WITH 5 LINES OF TEXT
```

Profile parameters inserted in the profile ADD mode:

```
          (user input underlined)

        5//MAKE SHIPS AND SOME BUZZWORD

END ADD WITH =
 100 =FIND [BUZZWORD] AND SHIPS

 110 =/3 NOLIST

 120 = =

== E
```

The above profile, in line 110, issues the command to execute another profile – the format 3 option. Profiles may be nested so that one profile executes another profile.

6.3 PROFILE Execution

To execute a profile from your PROFILE file, enter:

/EXECUTE

or:

/Profile name

or:

/EXECUTE Profile name

If no profile name is supplied, the system will execute the profile, if any, named "SAVE."

Example

```
/2
/5 DATE OFFLINE
/MY VERY OWN PROFILE MADE BEFORE LUNCH BREAK
```

Each line of the profile will be echoed back to the user as it is executed, and all output will be displayed. To see the results only, append "NOLIST" to the execute command.

Example without NOLIST

```
      (user input underlined)

   5//EXECUTE SHIPS AND SOME BUZZWORD

THE FOLLOWING ARE PARAMETERS TO BE SATISFIED
BUZZWORD? TOTAL ENERGY SYSTEMS

   5/ FIND TOTAL ENERGY SYSTEMS AND SHIPS
*      10    5/  TOTAL ENERGY SYSTEMS
*     279    6/  SHIPS
*       2    7/  TOTAL ENERGY SYSTEMS AND SHIPS
   8/ /3 NOLIST
THE FOLLOWING ARE PARAMETERS TO BE SATISFIED
LINE?7



U050312                    LIBR:       AN            02/1975 REC: 46
     PROPOSAL FOR A STUDY OF TOTAL ENERGY SYSTEMS FOR NA VY SHIPS

     DESCRIPTORS: WASTE HEAT BOILERS;ENGINES;DIESEL ENGINES;TOTAL
     ENERGY SYSTEMS;NAVAL VESSELS-ENERGY CONSERVATION
     HEAT RECOVERY EQUIPMENT;ENERGY SOURCES;GAS TURBINES;FUEL
     CONSUMPTION;RANKINE CYCLE


U058913                    LIBR:       AN            10/1974 REC: 2521
     REDUCED WEIGHT AND VOLUME ELECTRICAL SYSTEMS FOR SMALL WATERPLANE
     AREA TWIN-HULL(SWATH) SHIPS. DRAFT

     DESCRIPTORS: SWATH SHIPS-WEIGHT REDUCTION;SHIP ELECTRIC POWER
     PLANTS-WEIGHT REDUCTION; SWATH SHIPS-VOLUME
     SIZES(DIMENSIONS);ELECTRICAL EQUIPMENT;OPTIMIZATION; ELECTRIC
     GENERATORS;POWER CONVERSION SYSTEMS(SHIPS);POWER DISTRIBUTION
     SYSTEMS(SHIPS);TOTAL ENERGY SYSTEMS;GAS TURBINES;SHIP SERVICE
     GENERATORS; WASTE HEAT UTILIZATION;WASTE HEAT BOILERS;CABLES;
END OF PROFILE
```

Example with NOLIST

```
      (user input underlined)

  16//SHIPS AND SOME BUZZWORD NOLIST

THE FOLLOWING ARE PARAMETERS TO BE SATISFIED
BUZZWORD?INTEGRATED SYSTEMS

THE FOLLOWING ARE PARAMETERS TO BE SATISFIED
LINE?16

QA 913.L 911976Y           LIBR: C                  01/1978 REC: 4898
     AXISYMMETRIC VEHICLE SYSTEM DESIGN FOR TOTAL PROPULSION POWER
     OPTIMIZATION. IN LOW-SPEED BOUNDARY-LAYER TRANSITION WORKSHOP: II,
      SANTA MONICA, CA, 1976. PROCEEDINGS
```

```
DESCRIPTORS: UNDERWATER VEHICLES-MARINE PROPULSION PLANTS
DESIGN; OPTIMIZATION; TURBULENT BOUNDARY LAYER; LAMINAR BOUNDARY
LAYER; WIND TUNNEL TESTS; INTEGRATED SYSTEMS; AXISYMMETRIC;
BODIES; SHIP HULLS

          REMAINDER OF DISPLAY OMITTED
```

In order to execute a profile with parameters that are to be user-supplied, you may either issue the regular profile execute command and wait for the system to prompt you for required field values; or you may append a SATISFY clause to your execute command in the form:

/Profile Name SATISFY (parameter name = value)

Example

Sample Profile

```
USER FILE
"CURRENT NAVY PIC-A-TOPIC"
AUTHOR = CRAD
DATE   = 790927  TIME = 140316
 100 =FIND [DESCRIPTOR]
 110 =PD GT [PUBLICATION DATE]
 120 =CS=NAVY DEPT
 130 =(1 AND 2 AND 3)
 140 =DISPLAY BIB FOR ALL
```

(user input is underlined)

```
  19//EXECUTE CURRENT NAVY PIC-A-TOPIC SATISFY(DESCRIPTOR=DRAG REDUCTION, +
SATISFY...PUBLICATION DATE=19750000)

  19/ FIND DRAG REDUCTION
*       5   19/  DRAG REDUCTION
  20/ PD GT 19750000
      1247 ITEMS SAVED AS SET 20
  21/ CS=NAVY DEPT
      341 ITEMS SAVED AS SET 21
  22/ (19 AND 20 AND 21)
      1 ITEM  SAVED AS SET 22
  23/ DISPLAY BIB FOR ALL
```

```
ITEM 1

RECORD ID           4893
TITLE               COMPARISON BETWEEN MEASURED AND COMPUTED LOCATIONS OF
    TRANSITION ON NINE FOREBODIES OF REVOLUTION, IN LOW-SPEED BOUNDARY-LAYER
    TRANSITION WORKSHOP: II, SANTA MONICA, CA, 1976. PROCEEDINGS
MAJOR DESCRIPTORS   BODIES OF REVOLUTION-PRESSURE DISTRIBUTION
SUBJECT DESCRIPTORS:COMPARISON; AXISYMMETRIC; MODEL BASINS; BLUNT BODIES;
    COMPUTERIZED SIMULATION; MODEL TESTS; LAMINAR BOUNDARY LAYER; BOUNDARY
    LAYER SEPARATION; DRAG REDUCTION; EXPERIMENTAL DATA; PRESSURE MEASUREMENT
```

6.3.1 RESUME Command

/EXECUTE and /Profile Name were used to execute profiles that had been created with the /SAVE command or the /MAKE command. /RESUME is used to execute a profile that had been created with the /SUSPEND command. Use the form:

/RESUME

or:

/RESUME Profile Name

If no profile name is supplied, a profile called "SUSPEND*SAVE," if any, will be executed. The SATISFY clause may not be used with /RESUME. The following commands are eliminated from the profile before it is executed: DISPLAY, PRINT, LIST, and ROUTE.

6.4 PROFILE File Manipulation

6.4.1 PROFILE Listing

To see the names of the PROFILES in the PROFILE file associated with your BASIS ID, as well as those in the Data Base PROFILE file, enter:

/SHOW

Example

```
23//SHOW


USER FILE
A1     CURRENT NAVY PIC-A-TOPIC
A2     ENERGY EFFICIENT SHIPS
A3     SHIPS AND SOME BUZZWORD
A4     SUSPEND*SAVE
A5     SUSPEND*TRAINING SESSION
A6     TRAINING SESSION
A7     WELDING RESEARCH IN THE NAVY

DATA BASE FILE
B1     ACCESSIONS BULLETIN
B2     CURRENT NAVY PIC-A-TOPIC
```

```
B3     PROFXPROF
B4     SHIPS AND SOME BUZZWORD
B5     1
B6     1 OFFLINE
B7     2
B8     2 OFFLINE
B9     3
B10    3 OFFLINE
B11    4
B12    4 OFFLINE
B13    5
B14    5 DATE
B15    5 DATE OFFLINE
B16    5 OFFLINE
B17    6
B18    6 DATE
B19    6 DATE OFFLINE
B20    6 OFFLINE

DO YOU WANT TO EXECUTE ANY OF THESE PROFILES?
```

Your possible responses are:

(i) NO

(ii) YES the system will then ask you to ENTER THE TAG OF THE PROFILE TO EXECUTE

or:

(iii) enter the desired profile TAG

While /SHOW lists only the names of the available profiles, you may list the actual text of any one profile by entering:

/SHOW Profile Name

Example

```
23//SHOW 1


DATA BASE FILE
"1"
AUTHOR = CRMD
DATE    = 781025  TIME = 135452
 100 =SORT(LINE=[LINE]) CN KEEP(SUB="SUBS")DROP NOSET
 110 =REPORT EXECUTE "1"
 111 =BASIS
```

The text of all profiles can be listed with the command:

/SHOW ALL

6.4.2 PROFILE Editing

The PROFILE/REPORT editor must be used to change any existing PROFILE in your personal profile file. The first step in editing a particular profile is to enter:

/EDIT Profile Name

To list the lines of a profile, enter:

L

or L line #

or L line # – line #, line #

To delete lines, enter:

D

or:

D line #

or:

D line # – line #, line #

To replace or insert a line, enter:

line # = text

To add on to an existing profile, enter:

ADD

To change a line, enter:

/bad text/ = /good text/	(this will replace all occurrences of "bad text")
/bad text/ = /good text/, line #	(will replace "bad text" only in the specified line)

To leave the editor and keep the changes made, enter:

EXIT

or E

To leave the editor and discard the changes, enter:

KILL

Example

L 100-500	Lists lines 100 to 500
L	Lists entrie profile
D	Deletes the last line listed
D 500	Deletes line 500
500 = FIND FG=[field group]	Makes or replaces line 500 with the text shown
505 = DISPLAY ALL FOR ALL	Inserts a new line
/DISPLAY ALL/ = /DISPLAY BIB/, 505	Changes 505 above to read "DISPLAY BIB FOR ALL"

6.4.3 Other Changes

To rename a profile, enter:

/RENAME old name TO new name

To delete an entire profile from your file, enter:

/DELETE Profile Name

Example

RENAME CODE 2705 SDI TO CODE 2780 SDI
DELETE TEST PROFILE

7. Self-Help and Miscellaneous Commands

7.1 EXPLAIN Command

The EXPLAIN command may be used by searchers to obtain on-line orientation and assistance. A list of all topics available for explanation may be generated with:

EXPLAIN TOPICS

or:

? TOPICS ("?" is a short form for EXPLAIN)

Any topic listed can be further explained by entering:

? Topic Name

Common topics are:

? COMMANDS
? FIELDS
? DISPLAY
? Command Name
? PARAMETERS

EXPLAIN or ? may also be used after receiving a system message or error message to solicit further explanation.

7.2 CLOCK

The CLOCK command allows you to find information regarding correct time, time of day, and CPU time used. This same information is provided automatically when a user logs out from the computer. The CLOCK command would be useful for obtaining statistics on resources utilized for various user's searches when conducting searches for multiple users.

Example

```
23/CLOCK

SESSION TIME 39 MINS. 49 SECS. AT 140718 CP=26.367
```

7.3 SET Command

With the SET command, a searcher may change values for parameters that control the mode of your terminal session. After logging out, the values of all parameters automatically revert to their default values set by the DBA.

You have already encountered the SET command in conjunction with certain parameters. These were:

SET ADJ(ACENTS) TO #	To alter adjacent term list length
SET TERMS TO #	To alter stem and browse list length
SET FIELDS ON/OFF	To turn off or on the field #s in a DISPLAY
SET HEAD(ING)S ON/OFF	To turn off or on labels in a DISPLAY
SET ITEMS ON/OFF	To turn off or on item #s in a DISPLAY
SET PAUSE ON/OFF	To stop and start DISPLAY after a certain item count
SET UNIVERSE TO LINE #	To start UNIVERSE search mode
SET HIERARCHIC ON	To start hierarchical search mode

Other parameters may be SET as well. The default sort for a document set is in ascending numerical order of record ID. To reverse this order, enter:

SET DESCEND ON

To indent the display of fields exceeding one line to a number of characters other than the default of five, enter:

SET INDENT TO #

The library system "conducts" three different levels of dialog with interactive searchers according to their expertise. To change the TALK LEVEL, enter:

SET TALK = 0 for expert
SET TALK = 1 for standard (default)
SET TALK = 2 for novice

7.4 LIST Command

The LIST command may be used for various purposes, some of which are the same as the EXPLAIN command. To list document sets and commands issued since the start of your terminal session, enter:

LIST
LIST line #
LIST line # – line #, line #

Other uses for LIST are:

LIST COMMANDS
LIST PARAMETERS
LIST STATUS
LIST SEARCH

7.5 XEQ Command

To issue INTERCOM commands, use the XEQ Command. This command allows you to perform tasks not handled by BASIS. Use the form:

XEQ Intercom Command

Examples

XEQ SCREEN,80	Formats displays on an 80-character screen
XEQ ROUTE,PRINT,DC=PR,TID=001, FID=CRSM	Routes a BASIS print file to data system's printer
XEQ J,CRMD	Checks on the status of a batch job named CRMD

7.6 ABORT Command

To stop a terminal display, such as a lengthy listing or an incorrect command, enter the following after halting the display by hitting the space bar:

% ABORT

or:

% A

APPENDIX A-1. FIELDS IN LIBRARY DATA BASE

Field	Explanation	Searchable through Index	Mnemonic	Field Number	Repeating Occurrences	Characteristics
Record ID	Serially assigned number	*	ID	1		Ranged. 1-300000 for cataloging records, 400000 - 999999 for circulation records
Call Number	Location of physical item		CN	2		For reports; U,C, or S number. For monographs, LC call number (put space after groups of letters and before groups of numbers, except for Vol, PRT copy).
Record entry date	Date record added to data base	*	RED	4		Ranged. YYMMDD
Cataloger's ID	ID of individual who cataloged item		CAT	5		Number from 1 - 9
Corporate source	Corporate authors and sponsors	*	CS	7	*	Corporate source thesaurus entries only. Generic retrieval
Author main entry	First personal author		AME	8		Last name first initial middle initial
Title	Title		TI	9	*	
Authors	Personal authors		AU	12	*	Same form as field 8

APPENDIX A-1. (Cont.)

Field	Explanation	Searchable through Index	Mnemonic	Field Number	Repeating Occurrences	Characteristics
Publication date	Publication date	*	PD	13		Ranged. YYYYMMDD. Year for monographs, month and year for documents
Pagination	Number of pages, volumes, parts, etc.		PP	14		Number
Report number	Series number		SE	15	*	Standardized formats used for each series
Note	Refers to earlier or later editions, other vols., etc.		NT	16		
Shelf list	Indicates analytics, monographs, etc.	*	SL	18		Used for Library administrative purposes only
Publisher			PUB	20		
Carderock Library	Shows Carderock ownership	*	LC	22		C or C/REF
Carderock copies	Copy numbers owned		CC	23		
Annapolis Library	Shows Annapolis ownership	*	LAN	24		AN or AN/REF

APPENDIX A-1. (Cont.)

Field	Explanation	Searchable through Index	Mnemonic	Field Number	Repeating Occurrences	Characteristics
Annapolis copies	Copy numbers owned		ANC	25		
Field group	Code for broad disciplines	*	FG	28	*	See Appendix A-2 for possible values
Major descriptors	1-4 major subjects	*	MDE for display, DE for retrieval	29	*	Subject thesaurus entries only
Specific descriptors	0-40 specific subjects	*	DE	30	*	Subject thesaures entries only
Indentifiers	Acronyms, proper names, hull nos., formulars, other subjects	*	ID for display DE for retrieval	31	*	Open-ended subjects; not thesaurus controlled
Center document type	Code for all Center employee-authored work	*	TYP	32	*	See Appendix A-3 for possible values
Work unit number	Funding code for Center Reports	*	WU	33	*	
Transposed report number	Digits only in Center formal reports numbers		TRP	34		

APPENDIX A-1. (Cont.)

Field	Explanation	Searchable through Index	Mnemonic	Field Number	Repeating Occurrences	Characteristics
Circulation restriction	Omitted for unlimited distribution		CR	35	*	Values are C for no contractors; F for no foreigners or SD for special distribution
Reclassification review date	First date report requires classification change	*	RD	36		YYYYMMDD
Security code level	For library administrative purposes only		SC	37		Provides security locks for OMITS, NATO, and other sensitive reports
Special features	Nonprint forms		SF	38		Film; fiche; kit., etc.
Circulation call number	Call no. with copy number	*	CCN	46		Same as for field 2 but with copy number
CRS	Corresponding cataloging record ID	*	CRS	48		Number between 1-399999
Library	Library circulating the item	*	LIB	49		C or AN
Borrower	Borrower and code	*	BR	51		Last name, first initial, middle initial, code
Due date	Left blank for indefinite loans	*	DD	53		YYMMDD. Usually, the 15th day of 3rd month from date of check-out

APPENDIX A-1. (Cont.)

Field	Explanation	Searchable through Index	Mnemonic	Field Number	Repeating Occurrences	Characteristics
Interlibrary loan	For ILL transactions	*	ILL	55		L for items loaned to another library; B for items borrowed
Lending library			LL	56		Name of library
Wait list	Reserve list		WL	58	*	Up to 3 names and codes
Classified code	Used only for inter-library loans		CL	59		C or S
Remarks			RK	60		
Lost information	LOST	*	LS	61		

APPENDIX A-2. FIELDS AND GROUPS

0100 Aeronautics
- 01 01 Aerodynamics
- 01 02 Aeronautics
- 01 03 Aircraft
- 01 04 Aircraft flight instrumentation
- 01 05 Air facilities

0200 Agriculture
- 02 01 Agricultural chemistry
- 02 02 Agricultural economics
- 02 03 Agricultural engineering
- 02 04 Agronomy and horticulture
- 02 05 Animal husbandry
- 02 06 Forestry

0300 Astronomy and astrophysics
- 03 01 Astronomy
- 03 02 Astrophysics
- 03 03 Celestial mechanics

0400 Atmospheric sciences
- 04 01 Atmospheric physics
- 04 02 Meteorology

0500 Bibliography, reference, and management
- 05 01 Administration and management
- 05 02 Information sciences
- 05 03 Economics
- 05 04 History, law, and political science
- 05 05 Human factors engineering
- 05 06 Humanities
- 05 07 Linguistics
- 05 08
- 05 09 Personnel selection, training, and evaluation
- 05 10 Psychology
- 05 11 Sociology

0600 Biological and medical sciences
- 06 01 Biochemistry
- 06 02 Bioengineering
- 06 03 Biology
- 06 04 Bionics
- 06 05 Clinical medicine
- 06 06 Environmental biology
- 06 07 Escape, rescue, and survival
- 06 08 Food
- 06 09 Hygiene and sanitation
- 06 10
- 06 11 Life support
- 06 12 Medical equipment and supplies
- 06 13 Microbiology
- 06 14 Personnel selection and maintenance (medical)
- 06 15 Pharmacology
- 06 16 Physiology
- 06 17 Protective equipment
- 06 18 Radiobiology
- 06 19 Stress physiology
- 06 20 Toxicology
- 06 21 Weapon effects

0700 Chemistry
- 07 01 Chemical engineering
- 07 02 Inorganic chemistry
- 07 03 Organic chemistry
- 07 04 Physical and general chemistry
- 07 05 Radio and radiation chemistry

0800 Earth sciences and oceanography
- 08 01 Biological oceanography
- 08 02 Cartography
- 08 03 Dynamic oceanography
- 08 04 Geochemistry
- 08 05 Geodesy
- 08 06 Geography
- 08 07 Geology and mineralogy
- 08 08 Hydrology and limnology
- 08 09 Mining engineering
- 08 10 Physical oceanography
- 08 11 Seismology
- 08 12 Snow, ice and permafrost
- 08 13 Soil mechanics
- 08 14 Geomagnetism

0900 Electronics and electrical engineering
- 09 01 Components
- 09 02 Computers
- 09 03 Electronic and electrical engineering
- 09 04 Information theory
- 09 05 Subsystems
- 09 06 Telemetry

1000 Energy conversion (Nonpropulsive)
- 10 01 Conversion techniques
- 10 02 Power sources
- 10 03 Energy storage

APPENDIX A-2. FIELDS AND GROUPS (Continued)

1100 Materials
- 11 01 Adhesives and seals
- 11 02 Ceramics, refractories, and glasses
- 11 03 Coatings, colorants, and finishes
- 11 04 Composite materials
- 11 05 Fibers and textiles
- 11 06 Metals
- 11 07 Miscellaneous materials
- 11 08 Oils, lubricants, and hydraulic fluids
- 11 09 Plastics
- 11 10 Rubbers
- 11 11 Solvents, cleaners, and abrasives
- 11 12 Wood and paper products
- 11 13 Corrosion and degradation

1200 Mathematical sciences
- 12 01 Mathematics and statistics
- 12 02 Operations research

1300 Mechanical, industrial, and civil engineering
- 13 01 Air conditioning, heating, lighting, and ventilating
- 13 02 Civil engineering
- 13 03 Construction equipment, materials, and supplies
- 13 04 Containers and packaging
- 13 05 Couplings, fasteners, and joints
- 13 06 Ground transportation equipment
- 13 07 Hydraulic and pneumatic equipment
- 13 08 Industrial processes
- 13 09 Machinery, tools, and industrial equipment
- 13 10
- 13 11 Pumps, filters, pipes, tubing, and valves
- 13 12 Safety engineering
- 13 13 Structural engineering
- 13 14 Environmental pollution
- 13 15 Energy conservation

1320 Marine engineering and naval architecture
- 13 21 Design construction, maintenance, salvage operation, and performance of all types of ships, boats, and marine equipment
- 13 22 Structural mechanics as applied to naval ships. Stress analysis, elasticity, shock, and vibration
- 13 23 Hydrodynamics

1400 Methods and equipment
- 14 01 Cost effectiveness
- 14 02 Laboratories, test facilities, and test equipment
- 14 03 Recording devices
- 14 04 Reliability
- 14 05 Reprography
- 14 06 Research
- 14 07 General concepts
- 14 08
- 14 09 Geometric forms

1500 Military sciences
- 15 01 Antisubmarine warfare
- 15 02 Chemical, biological, and radiological operations
- 15 03 Defense
- 15 04 Intelligence
- 15 05 Logistics
- 15 06 Nuclear warfare
- 15 07 Operations, strategy, and tactics

1600 Missile technology
- 16 01 Missile launching and ground support
- 16 02 Missile trajectories
- 16 03 Missile warheads and fuzes
- 16 04 Missiles

1700 Navigation, communications, detection, and countermeasures
- 17 01 Acoustic detection
- 17 02 Communications

APPENDIX A-2. FIELDS AND GROUPS (Continued)

- 17 03 Direction finding
- 17 04 Electromagnetic and acoustic countermeasures
- 17 05 Infrared and ultraviolet detection
- 17 06 Magnetic detection
- 17 07 Navigation and guidance
- 17 08 Optical detection
- 17 09 Radar detection
- 17 10 Seismic detection
- 17 11 Miscellaneous detection
- 17 12 COMTACT Publications

1800 Nuclear science and technology
- 18 01
- 18 02 Isotopes
- 18 03 Nuclear explosions
- 18 04 Nuclear instrumentation
- 18 05
- 18 06 Radiation shielding and protection
- 18 07 Radioactive wastes and fission products
- 18 08 Radioactivity
- 18 09 Reactor technology
- 18 10 Reactor materials
- 18 11 Reactor physics
- 18 12
- 18 13
- 18 14

1900 Ordnance
- 19 01 Ammunition, explosives, and pyrotechnics
- 19 02 Bombs
- 19 03 Combat vehicles
- 19 04 Explosions, ballistics, and armor
- 19 05 Fire control and bombing systems
- 19 06 Guns
- 19 07 Rockets
- 19 08 Underwater ordnance

2000 Physics
- 20 01 Acoustics
- 20 02 Crystallography
- 20 03 Electricity and magnetism
- 20 04 Fluid mechanics
- 20 05 Masers and lasers
- 20 06 Optics
- 20 07 Particle accelerators
- 20 08 Particle physics and nuclear reactions
- 20 09 Plasma physics
- 20 10 Quantum theory and relativity
- 20 11 Mechanics
- 20 12 Solid state physics
- 20 13 Thermodynamics
- 20 14 Wave propagation

2100 Propulsion, engines, and fuels
- 21 01
- 21 02 Combustion and ignition
- 21 03 Electric propulsion
- 21 04 Fuels
- 21 05 Jet and gas turbine engines
- 21 06 Nuclear propulsion
- 21 07 Reciprocating engines
- 21 08 Rocket engines
- 21 09 Rocket propellants
- 21 10 Engine components
- 21 11 General engine concepts
- 21 12 General propulsion concepts

2200 Space technology
- 22 01 Astronautics
- 22 02 Spacecraft
- 22 03 Spacecraft trajectories and reentry
- 22 04 Spacecraft launch vehicles and ground support

2300 Planning Documents

9000 ABC Collection	9004 EEO Collection 4/2/79	9008
9001 Energy Collection	9005	9009
9002 Intelligence Collection	9006	9010
9003 Seaplane Collection	9007	

APPENDIX A-3. CODES FOR CENTER DOCUMENT TYPE
[Field (32)]

FR-CTR	=	Formal Center reports	Carderock and Annapolis since the merger
DR-CTR	=	Center Departmental reports	
FR-C	=	Carderock Formal reports	Carderock/premerger only
DR-C	=	Carderock Departmental reports	
FR-AN	=	Annapolis Formal reports	Annapolis/premerger only
DR-AN	=	Annapolis Departmental reports	
IR	=	Informal reports*	
PT	=	Patents, patent applications, related papers	
PA	=	Papers, articles, discussions of papers, presentations, symposia, workshops, conferences, lectures, viewgraphs, graphics	
CR	=	Contractor reports that are not a formal, departmental, or informal report	
IP	=	Informal papers Includes: trip reports, interdept. memoranda, working papers, in-branch reports that are not IR; RFP's, proposals, specifications, drawings, etc.	
PD	=	Planning documentation, responses to AGORS, annual repts., five year plans, 1498's, etc.	
PL	=	Ships Plans	

*Includes: test and/or evaluation reports, letter reports, memorandum reports, technical manuals, design guides, operators or users manuals, specification development reports, training manuals or guides, speed letter reports, tech notes, tech memoranda.

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